ENGINEERING and MINING JOURNAL.

VOL. XXVII., No. 10.

RICHARD P. ROTHWELL, C.E., M.E., ROSSITER W. RAYMOND, Ph.D., } Editors.

WILLIAM H. WAHL, Ph.D., Department of Progress in Science and the Arts.

NOTE.—Communications relative to the editorial management should be addressed to RICHARD P. ROTHWELL, P.O. Box 4404, New York.

Communications for Mr. RAYMOND should be addressed to ROSSITER W. RAYMOND, P.O. Box 1465, New York. Articles written by Mr. RAYMOND will be signed thus *.

SUBSCRIPTION PRICE, including postage, for the United States and Canada, $4 per annum; $2.25 for six months; European countries, including postage, $5.00 = 20s. = 25 francs = 20 marks. South American countries, including postage, $6 = £1 5s. All payments must be made in advance.

REMITTANCES should always be made by Post-Office Orders or Bank Drafts on New York, made payable to THE SCIENTIFIC PUBLISHING COMPANY.

THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
27 Park Place, New York.

CONTENTS.

EDITORIALS:	PAGE.
Members of the American Institute of Mining Engineers	159
Mr. Eads and his Work	159
The Consolidated Surveys	159
Be it Resolved that Every Man Shall Receive a Full Day's Wages for Half a Day's Work	159
The Pennsylvania Coal Mine Inspectors' Report	160
Personals	160
The Ore Deposits of Leadville.—III	160
Investigating Subterranean Phenomena with the Microphone	161
Prospecting	161
The Origin of Metallurgy	161
Pumping Gold	162
The Connellsville Coke Region of Western Pennsylvania	163
San Juan (Colo.) Silver Mines	165
Pacific Coast Mining Matters	165
PROGRESS IN SCIENCE AND THE ARTS:	
Gary's Magnetic Motor	166
Spontaneous Generation	166
Electric Light	166
Dissociation of the Elements	166
Geological Surveys of North Carolina and Georgia	166
Discussion Concerning Eozoön	166
Yellowstone and Big Horn Rivers—Excursion	166
Sea-Route to Siberia	166
Belgian African Expedition	166
Captain Howgate's Polar Colony	166
Philippium	166
Cohesion in Welding Two Metals	166
Quantitative Estimation of Nitric Acid	166
Reaction for the Detection of Cobalt	166
Artificial Benzoic Acid	166
Creosote as a Preservative of Timber	166
Railroad Across the Sahara	167
Locomotive-Building in Paterson	167
Mexican International Exhibition	167
Vegetable Isinglass	167
Chromic and Vanadic Acids	167
The Madeira and Mamore Railway	167
Railway Building in the United States	167
Exhibition for Hydraulic Machinery	167
Engineering Items	167
The Belgian Coal Trade	167
GENERAL MINING NEWS	167
NEW PATENTS	168
PROPOSALS	168
NOTES:	
Separation of Zinc and Nickel	164
Chromic Oxide	165
Lignite	165
THE COAL TRADE REVIEW	169
STATISTICS OF COAL PRODUCTION	172
IRON MARKET REVIEW	170
METALS	174
Coal and Iron Notes	171
BULLION MARKET	174
FREIGHTS	173
FINANCIAL:	
The Coal Stocks	175
Miscellaneous Stocks and Quotations	176
Gas Stocks	176
Copper Stocks	175
Gold and Silver Stocks	176

MEMBERS OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

The accompanying list contains names of members elected, not in the list given in the ENGINEERING AND MINING JOURNAL of February 22d They were presented after our list had been mailed from Baltimore:

George A. Crocker, New York City.
Ed. L. Ford, Springfield, Ill.
Chester Griswold, New York City.
Jed. Hotchkiss, Staunton, Va.
Isaac G. Johnson, Spuyten Duyvil, N. Y.
Major John R. McGinness, St. Louis, Mo.

MR. EADS AND HIS WORK.

It is understood that the River and Harbor bill, passed by Congress, contains a provision for a large payment to Captain EADS, and hence we presume that his request for a change in the terms of his contract has been, in some form or other, granted. The recent report of the Board of Engineers appointed to consider the condition of the jetty improvements showed that the terms of the contract were bearing hardly upon the contractor, and it seems no more than fair that he should be, to some extent, relieved.

Although the Board (composed of Generals BARNARD, MACOMB, TOWER, and WRIGHT, and Colonel MERRILL) does not indorse the estimates of Captain EADS as to the results to be hereafter attained, it certifies to a bar-depth of 23 feet (December 28th, 1878), and a constant progressive general improvement in the jettied channel during the last year. Moreover, it declares that "the actual results, so far as we know them, do not justify the predictions of accelerated bar advance. On the contrary, they show a disappearance of bar material from the front of the jetties." This point is in Captain EADS's favor, and he is entitled to a frank acknowledgment of it.

But we find, in the careful report of the Board, ample reason for caution as to the acceptance of the claims put forward for the jetty system as a proved and complete success. The maintenance of the jetties is still an unknown element. Their extension, if it should become necessary, would be both costly and difficult. And it is not proved that this will not become necessary. The channel outside of the jetties is a shifting one, and it still remains to be seen what is to be the normal and final condition of the bar, or what its advance. The year 1878, so far as its testimony goes, has testified in several important particulars in favor of Captain EADS. The *a priori* calculations of some of his critics are shown to have been at fault. The difficulties they anticipated have not yet arisen in full proportions. But, on the other hand, Captain EADS must have made mistakes in his calculations also; else why should he need to be released from his obligations under the contract? The fact is, the quantitative estimates of time, etc., in such a case, are affected by too many unknown elements to be prophetically accurate. But the qualitative argument is not thereby utterly overthrown. Whether the required navigable channel can be obtained and maintained by reasonable expenditure under the jetty system is a question not quite half-solved as yet. *

THE CONSOLIDATED SURVEYS.

From the somewhat fragmentary reports of the daily press concerning the disgracefully confused and hasty work of the closing hours of the session of Congress, we gather that the suggestion made by us, concerning the National Surveys, has turned out to be a prophecy. The geodetic and land-parceling surveys are left for the present as they are; but the geological surveys of the Territories are, by a clause appended at the eleventh hour to one of the Appropriation bills, consolidated under a Director, to be appointed by the President, and to be responsible to the Secretary of the Interior. Appropriations have been made at the same time for the completion of office-work, etc., of the POWELL, WHEELER, and HAYDEN surveys as thus far conducted. We can not yet make out whether these surveys are expressly continued as now organized; but we presume that this is not the case. Certainly a Director, if worthy of so responsible an office, ought to have perfect freedom in reorganizing the whole work of the geological survey.

Much now depends upon the action of the President in choosing the right man for this great enterprise. If the geological survey were an established institution, with its rules, methods, and traditions, there would be less danger in placing at its head a man of mediocre ability. But the Director now to be appointed must create his institution as well as administer it. The impulse now given to it will determine its future. The manner in which it is conducted for the next two years will either fix it as a recognized and esteemed permanent branch of the public service, or expose it to utter overthrow, and doom the country to recurring chaos in this department.

Hon. A. S. HEWITT made in the House an exceedingly forcible speech in behalf of this consolidation, arguing eloquently that the great mission of this nation is the development of the natural resources of its domain, in the description of which the orator exhibited a good deal more than the average Congressional acquaintance with his subject. But Mr. HEWITT's argument went further than he perhaps intended. In referring to the *loess* formation of the Mississippi Valley, and to the phosphate deposits of South Carolina as subjects which needed investigation, he implied that the survey of the economical resources of the States, as well as the Territories, should be carried on by the general government—that private lands, as well as the public lands, should be studied at the public expense. There is much to be said in favor of this idea; but we scarcely think it would meet with general acceptance. Certainly it would constitute a radical departure from the principle hitherto followed. Nearly all the States have maintained, with more or less liberality and success, geological surveys; and those which have spent most money in this way have reaped their reward in the increase of immigration and the stimulation of industry. Their example, it may well be said, should inspire the rest to imitate them; and those States which neglect to perform this obvious duty should not be repaid by having it done for them out of the public treasury.

At all events, there is work enough, for years to come, in the exploration of the public domain; and we hope this work will now make sure and steady progress. If the new Director is wise, he will understand that his primary object must be to ascertain and make known the resources of the public lands. Let him boldly put the economical problems first, and win public respect for scientific work by showing, even to the unscientific, what benefits it can confer upon the community. Let him imitate the sagacity of CLARENCE KING, who published first of all his volume on the Mining Industry, and last of all his theoretical deductions in continental geology. *

BE IT RESOLVED THAT EVERY MAN SHALL RECEIVE A FULL DAY'S WAGES FOR HALF A DAY'S WORK.

"At a meeting of the miners and laborers of the anthracite coal region held in Hazleton, March 1st, the following preamble and resolutions were adopted:

"*Whereas*, Labor being the creator of all wealth, through and by which alone organized society and civilization is possible; and whereas, that portion of society which is engaged in labor being the most important part, the rest being dependent on that part for support; and whereas, it is manifest to all that under the present condition of the coal trade the miners and laborers, and all others who toil in and around the mines are rendered destitute and endure misery and want while wreck and ruin threaten to-day to drive the merchant, the tradesman, the mechanic, and, in fact, all individual labor and enterprise to seek relief at once, and make common cause against those who have demoralized and destroyed the market for coal; and, whereas, we are assembled to propose and perfect some

method by which our present and future condition will be improved, and to adopt a system that will end the insane competition which has proved so ruinous to the interests of the miners and laborers of Pennsylvania, and if possible put a stop to the system of selling coal at public auction as practiced by large mining and transportation companies, to the great injury of the trade and utter ruin of all business and labor dependent thereon;

"*Resolved*, That any proposition or plan any one identified with coal mining may have to offer for the more thorough systematizing the different coal interests for the amount properly to be shipped for the several regions, in order to give each region equitable and legitimate tonnage of all coal shipped for the restriction of tonnage, whether at the mine and by the miners in the number of cars they may deem proper to load daily, by the operators as to the best method of regulating shipments, will be accepted by this body.

"*Resolved*, That we recommend to all miners and laborers of the anthracite coal region, a suspension of mining, commencing on the 15th day of March, to last as long as may be deemed necessary or available by a central committee of operators and miners, or either, to be selected at the said meeting in Harrisburg on March the 11th, hereby providing, this resolution subject to final determination at that meeting."

Have the miners in the anthracite region so soon forgotten the experience of the past eight years, the disastrous strikes, the overcrowded mines, the injury done to business generally by the high price of coal, and the utter ruin brought on nearly all the individual operators by the actions of the Miners' Union in first limiting the amount of coal a man should be allowed to mine in his day's work to about half what he might have done; and when that method of increasing cost had diminished the demand for coal, next by ordering total suspensions of work which were accompanied by breaker-burning and Molly Maguire outrages? Have the miners forgotten that this policy they now talk of reinaugurating was followed by the organization of the combination of the great companies, which adopted the same course in ordering suspensions of work, and in keeping up high wages and prices till the trade was crippled, the companies almost bankrupted, and every interest in the coal regions all but ruined? No, thank you, gentlemen; we don't want any more experiments in that kind of political economy. We have gone through its every phase, as our fathers did before us, and they and we have found that it is building on a quicksand—the higher you build, the deeper it sinks and the more complete the ruin. Let the miners unite, not to force their worse-paid fellow-workmen and women in other industries to pay them, through the high price of coal, a day's wages for half a day's work—not to ruin operators by making them work two mines where one could produce the coal—not to drive the companies into another combination which will have power to oppress the public and starve the miner into submission; but let them unite to make themselves and their sons more skillful workmen by encouraging and profiting by some such plan as that recently proposed by Mr. ECKLEY B. COXE; and let them unite to procure their supplies at the lowest wholesale prices, and let them have their wives and daughters taught what is best to buy, and how to use what they get with the greatest advantage. If they unite to secure these things, they can at once effect a saving of from ten to fifty per cent in their expenditures, and get a vast increase in their comfort and well-being. No advance in wages they might secure, even after the most successful strike, could benefit them one half as much as these modest things.

THE PENNSYLVANIA COAL MINE INSPECTORS' REPORT.

THE MIDDLE DISTRICT OF LUZERNE COUNTY.

Mr. T. M. Williams, Inspector of the Wilkes-Barre District, gives us the following notes from his report for 1878:

Coal produced in the Middle District, Luzerne County, in 1878, 4,082,372 tons, including 124,000 tons added to the amount reported as local sales and consumed about the mines.

Coal produced per life lost, 113,399 tons.

Lives lost, 36; injured, 99.

Men employed inside, 7144; boys, 1506; total inside, 8650.

Outside men, 1721; boys, 2674. Total, 4395.

Total in 1878, 13,045; in 1877, 14,073; in 1876, 14,317; and in 1875, 15,000.

Total number of actual miners employed, 2860; number of breakers in the district, 52, of which 18 were idle the whole year.

Average number of days worked per employee, 139·62; number of steam-boilers in use, 747; number of mules, 1310.

Accidents.—Of the 36 lives lost, 7, or 19·44 per cent, were by explosions of fire-damp; 14, or 38·88 per cent, were by falls of coal and rock; 5, or 13·38 per cent, were by mine-cars; and 4, or 11·9 per cent, were from powder-blasts. Miscellaneous underground accidents killed 3, or 8·33 per cent, and 3, or 8·33 per cent, were killed by accidents on the surface.

PERSONALS.

Our Readers are invited to send us Items for this Column.

The city of Richmond, Va., offers prizes for the best designs for pumping-machinery.

If it were not for the Sutro Tunnel, the future of the Comstock would be far from encouraging.

Colorado will this year stand at the head of the gold and silver producing States. But Nevada will lose more than Colorado can make up.

The MINIATURE COPY of the ENGINEERING AND MINING JOURNAL, which has already been largely distributed, is everywhere pronounced a marvel of beauty. Send for it.

Our Coal and Iron Trades receive full attention in this number. We commend, to all interested in these industries, a perusal of the very interesting trade correspondence from all the principal markets with which we have been favored. Four extra pages have been added this week to accommodate this matter. Our next Special Coal and Iron Trade Number will be issued on April 5th. We invite correspondence.

New strikes and big and bigger bonanzas are reported in such numbers from Colorado that after recording strikes, valued at many thousands of millions of dollars, we have still about a hundred, more or less, of the richest awaiting announcement. There need be no excitement or uneasiness about these fabulous riches. A few months more will increase the supply of bonanzas till every free American, and perhaps a few "heathen Chinee," will get a mine with "millions in it" for the asking.

There is an exceptionally favorable opportunity for the establishment of profitable concentration works in the Ouray District, Colo. Our special correspondent, "W. W.," gives full particulars in another column. We need only add that our correspondent's statements are thoroughly reliable, and that the enterprise would be one of the safest and most lucrative that could be embarked in.

A ten-stamp concentration mill, near Boulder, Colo., working four Frue belts, and concentrating about 12 tons of telluride ores per 24 hours, was, a year ago, running at an expense in labor of $8 a day, and was doing very well when receiving $4 a ton for concentrating.

The total cost of the works was less than $9000, so that we think our correspondent's estimates *safe*.

ELECTION OF OFFICERS OF THE IRON AND STEEL ASSOCIATION.—At a meeting of the American Iron and Steel Association on the 6th inst., Daniel J. Morrell, of Johnstown, Pa., was elected President of the Association. Joseph Wharton, of Philadelphia; Abram S. Hewitt, of New York; Samuel M. Felton, of Philadelphia; B. F. Jones, of Pittsburg, and James Park, Jr., of Pittsburg, were elected Vice-Presidents. Charles Wheeler was elected Treasurer, and James M. Swank, Secretary. It was resolved that hereafter the Association should meet at least once in each year, at such place as may be selected by the Executive Committee, and that the next meeting be held in April or May next in Pittsburg, at such time as the Executive Committee may determine.

THE ORE DEPOSITS OF LEADVILLE.—III.

Written for the Engineering and Mining Journal, by Carl Henrich, E.M.

In our first article, we have seen that the ore-beds of Leadville occur seemingly in four different layers between limestone and porphyry, with four different outcrops, each higher than the preceding one, as we advance to the east. In our second article, we have tried to show that these different ore-beds were originally the same, and are the same to-day in geological position, only broken up into different terraces, by faults or breaks running in a northerly and southerly direction. It is doubtful whether the fault between the third and fourth limestone outcrop, counting from Leadville to the east, has its origin entirely in a breakdown or sinking of the western part; or whether it does not partly or altogether owe its origin to a later upheaval in the line of the Mosquito or Park Range. The steeper pitch of this fourth and highest bed of limestone (about 20° from the horizontal), and an outcrop of granite at the head-waters of Iowa Gulch, would seem to indicate such a cause.

Having pointed out, in the previous articles, the present position of the strata of porphyry and limestone, forming the hanging and foot-walls of the contact-ore deposits of Leadville, and their probable formation, let us proceed now to the character and contents of these ore deposits themselves; limiting ourselves in this article to the contact deposits proper, and leaving the fissure-veins in the porphyry and the stockwerks in the limestone to a future occasion.

Only the two lower contact beds between the limestone and porphyry have, so far, been opened up to any extent. Above the third limestone bed, always counting from Leadville to the east, there have been some prospect shafts sunk on the ridge between Empire and Iowa gulches, above the Long & Derry mine, and the contact reached, but without striking any "carbonates." We shall not proclaim this bed barren on that account, especially since all these prospect-shafts have been sunk very near the top of the limestone, and, therefore, in places where an insignificant thickness of porphyry only forms the roof, giving through its numerous fissures and cracks an easy access to the surface-water, and thereby inviting a natural leaching process. But there remains in this contact a siliceous clay with very evident traces of silver, some of it running from 40 to 50 ounces of silver to the ton. The following of the Tiger vein, near Bald Mountain, downward through the porphyry to the limestone, will afford a good occasion, in a not too far future, to judge better of the nature of this contact.

The fourth contact of limestone and porphyry has not been prospected at all, and no wonder, considering that the Dyer mine works its stockwerk in the limestone already 500 to 600 feet above timber-line, and remains one half of the year blockaded by snow.

We may concentrate, therefore, our attention on the two lower contacts: the one embracing the Carbonate Hill and Fryer Hill mines; and the other, the Iron Hill mines, whose northern extension has been struck by several mines between Stray Horse and Big Evans Gulch.

The contents of these two ore-beds consist of iron and lead ores.

The iron ore of these ore-beds is generally *highly* siliceous, in many

places changing to a hard ferruginous quartz-rock; in other places, being a very siliceous hematite, the latter in almost every instance of a sandy nature. Treating this sand with muriatic acid, we extract the iron oxide, and there remains a white sand, closely resembling the sand left by the decomposition of the overlying porphyry. This iron ore forms mostly the bottom of the ore-bed, and reaches in places the thickness of nine feet. It always contains at least a few ounces of silver to the ton.

The lead ores of this ore-bed consist of hard and soft carbonates of lead and streaks of galena. As a general rule, the soft, sandy carbonates run highest in silver and the hard carbonates lowest, while the galena seems to range between them in its percentage of silver. Silica occurs in all of these ores. In the galena it occurs as quartz crystals, impregnated between the galena crystals. As a general rule, the galena ore is lowest in its percentage of silica and highest in lead, while in silver it runs from 30 to a few hundred ounces to the ton. Highest in silica are the soft sandy carbonates of these ore-beds, the silver ore *par excellence* of this district. Here again, as in the iron ore, we have sandy carbonates, which are hardly any thing more than a porphyry sand—named so, too, by the miners—carrying a small percentage of lead and a few ounces of silver to the ton, up to siliceous carbonates of lead carrying over 60 per cent of lead and hundreds of ounces of silver to the ton. When carrying a very high percentage of lead, these sandy carbonates are almost always mixed with small pieces of galena, which accounts for their high percentage in lead, besides carrying considerable silica, probably in the form of quartz-sand, left from the decomposition of the porphyry, without improving its contents in silver.

The hard carbonates, when they contain a high percentage of lead—up to 65 per cent—which they often do, are comparatively free from silica; while in other dense and hard carbonates, the amount of silica is considerable. The higher the percentage in silica, the less lead they contain, and *vice versâ*, resembling in this respect the hard iron ores and ferruginous quartz-rock of this ore deposit.

The thickness of the whole ore-bed at these two lower terraces varies from a few inches to 24 feet. Sometimes it is entirely composed of iron ore, sometimes mainly of carbonates, and of course generally of both in any conceivable ratio between the two extremes.

The iron ore generally contains too much silica to use it as a flux, and too little silver to make it a silver ore. Still in some places—for instance, the Bevis mine in Big Evans Gulch—the ferruginous quartz-rock contains enough impregnated galena, and probably horn-silver, to bring it up to 100 to 150 ounces of silver to the ton.

When we look at the sandy carbonates, gradually changing to the argentiferous porphyry-sand; when we consider the ferruginous porphyry sand gradually changing into a siliceous hematite; when we consider the dense quality of the underlying limestone and the nature of the overlying porphyry, cracked in every direction and letting the water through like a sieve or filter; when we observe in many places the sides of these cracks in the porphyry, especially of those leading downward, impregnated by iron oxide to the depth of an eighth of an inch, resembling, and often mistaken for, small streaks of iron ore; when we nearly always find the porphyry roof of this ore-bed changed to the thickness of several feet to a siliceous clay; we can hardly doubt that these ore-beds owe their existence to a replacing of porphyry or parts of it by iron and lead ore, carried in mineral solutions through the cracks of the overlying porphyry—and probably owing their metallic character to a leaching-out of the metalliferous porphyry—down to the limestone, which checked these mineral waters in their downward course, and in whose basins these ore-beds were then formed by the chemical action of the siliceous limestone, of the porphyry and the metamorphosed rocks. The metamorphism is due to the overflow of the limestone by the porphyry on the mineral solution.

This would decide the question, whether these ore-beds are to be considered regular beds or strata, formed after the limestone and before the porphyry, or real contact-veins, filled and formed after the deposition of the porphyry, in favor of the latter theory.

LEADVILLE, February 8, 1879.

INVESTIGATING SUBTERRANEAN PHENOMENA WITH THE MICROPHONE.

M. d'Abbadie presented to the Academy of Sciences at its last sitting a memoir by M. De Rossi, entitled, "Il Microfono nella Meteorologia Endogene," and accompanied it with the following remarks: "In India, a business is carried on by men called spring-seekers, who generally succeed in designating the subterranean place where water may be obtained; they lie down on the ground and found their judgment on their hearing, which becomes extremely acute by practice. A few years ago, on the occasion of an earthquake at Bagneres-de-Bigorre, in the Pyrénées, Mr. Maxwell Lyte had the idea of placing on the ground an instrument resembling a gigantic stethoscope and was able to hear the crackings of the terrestrial crust. To M. De Rossi was reserved the honor of raising those empirical attempts to the height of a science, by applying the microphone to the exploration of the soil in its hidden depths. The learned founder of the "Bullettino del Vulcanismo Italiano" commenced his researches in his Observatory of Rocca di Papa, near Rome, and was very soon able to distinguish three different sounds which he could connect with the various movements of his seismatic pendulums. He was able afterward to confirm his results in observing the microphone at Vesuvius, and the solfatara at Pozzuoli, where the movements of the earth's crust are very frequent. Without going any further into the details of that memoir, I must mention the fact that very strong subterranean explosions were heard through the microphone immediately preceding a shock of earthquake. Although M. De Rossi is too prudent to assert the fact, he gives us a glimpse of the possibility of thus predicting approaching cataclysms. However that may be, the *savant* has conferred on science a new means of study which ought to be employed at all meteorological observatories. By establishing facts which have hitherto escaped us, we may perhaps succeed in explaining the causes, still so mysterious, of earthquakes.

THE mining districts are crying for an unlimited silver coinage; yet the *Chronicle* says Mexican dollars are worth but seventy-five cents in Leadville, and hard to get rid of at that.

PROSPECTING.

The following letter, by Mr. J. E. Clayton, Mining Engineer, to the Salt Lake *Tribune*, gives information we are very frequently asked for, and will, no doubt, interest a number of our readers:

1. Examine the gravel and boulders of the mountain streams and note carefully the structure and character of the gravel wash. This will reveal the geological formations that are intersected by the stream. Try the sands at the head of the gravel bars for free gold, or for any crystallized minerals, etc. If the structure of the quartz boulders or other vein-stones are favorable, go up the stream until the geological zone is found that has produced the quartz or other metal-bearing minerals. Then follow the supposed metal-bearing zone on its line of strike, and make especially careful examinations wherever eruptive dikes are found intersecting the formation.

2. When a lode or vein is found, note carefully its relation to the country rock, especially any differences in the opposite walls of the vein. Then follow it on the line of out-crop, and note carefully those points where the best ores are seen, so as to determine the position of the best ore-chutes before making any location on the lode.

3. The first work should consist of shallow cuts across the lode at intervals of 50 to 100 feet, or, if the vein is small and partially covered by soil and *débris*, a trench along the line of out-crop is preferable. If the surface-tracing is satisfactory, and the true line of strike has been determined, then survey your claim and stake off the boundaries according to the requirements of the United States laws.

4. The work of exploring the vein underground is the next thing in order. To do this intelligently, you must select that point on the line of out-crop where the best ore is found, then sink a shaft on the lode following the angle of dip, keeping both foot-wall and hanging-wall exposed if possible. If the lode is too wide for this to be done, then follow the best ore-streak of the vein itself, and at every fifty feet in depth, make cross-cuts to the walls of the vein. After 100 feet deep has been reached, run levels each way from the shaft on the line of the vein in order to determine the extent or spread of the ore-chute or chimney on the horizontal line. When the limit of the ore-body on the horizontal line has been ascertained, then sink 100 feet more, and drift right and left as before. If more than one chimney of ore is found on the line of the vein, a shaft should be sunk on it and drifts run as above stated, being careful to confine all the exploring work within the walls of the vein itself. When enough has been done to prove the character, size, and quality of the vein, it will then be time to determine the position, character, and extent of the "dead-work" necessary to work the mine to the deep. These questions should be settled by careful surveys made in the light of all the local facts and surroundings, such as the geological structure of the country rock, the probable amount of water to be raised, the lowest point of drainage by adit or level, and the most convenient point for delivery of the ores to the surface, etc.

The last part of the preliminary exploration of any mine is to determine, by actual tests, what are the best methods of reduction, and the extent and kind of reduction works needed, etc.

5. After all these preliminary facts have been thoroughly ascertained and clearly defined, the *unavoidable* risks of mining will have been fully met and overcome. All subsequent operations are simply matters of skill and business management, and the capitalizing of the mine becomes a mere matter of business detail.

The *requirements* are as follows:

1. The preliminary exploration must have ore enough cut and underrun, or otherwise exposed, to give at least *two years' work* for reduction works of an extent sufficient for the average annual output of ore.

2. The reduction works must be suited for the best treatment of the ore.

3. The exploration of the mine must be pushed ahead of the extraction of ore, so as to expose at least one ton of ore in new ground, for every ton extracted from the previously explored ground.

4. Before erecting reduction works, the ore exposed in the mine should be so thoroughly tested as to guarantee a net profit sufficient to pay the whole cost of such works.

5. The mine being well opened, and the reduction works, or plant established, the general success of the enterprise must depend upon the efficiency of the general business management.

SALT LAKE CITY, February 7, 1879.

THE ORIGIN OF METALLURGY—THE BRONZE AGE.*

(*Continued from page* 147.)

IV.

We must now speak of the industries of the bronze age of which the several strata compared with each other have revealed the existence, nature, processes, and relative epochs; among them there were some indigenous. Undoubtedly the men of those ancient times must have built their own houses, which were made of wood, after the time they left the caves. Those which they erected on solid ground have disappeared without leaving any traces behind; and, if the houses of the lakes have been destroyed, at least the piles upon which they were built still remain. Those of the epochs anterior to metal were nearer the banks and did not project so far out of the water. The others were built beyond the first, and in Savoy have a greater jutting out, by which they can easily be recognized. The pieces of wood resting on the piles and forming the flooring, were fastened together by means of tenons and mortises; which shows clearly that they could, with hatchets and chisels of stone, cut and shape large pieces of wood. Planks were made by splitting the trunks of trees; the stone saws are only several inches long, while those of bronze are not a foot; they could only be used on light work. Spoons, tool-handles, spindle-shanks, sabots, a porringer, and part of a bucket, etc., have been extracted from the lakes of Savoy.

The great number of bobbins of baked clay, which are called by the Italians *fusaioles*, indicate that the custom of spinning and weaving was then extant; there were many discussions as to the use of these small cones bored through their *axis*, but there is now no more doubt, since a

*Translated for *Van Nostrand's Magazine*, from the French of Emile Burnouf, by Christopher Fallon, A.M.

complete spindle was found in the lake of Bourget. We have, ourselves, seen pieces of wood worn out in the holes of many bobbins, found in Troy by Dr. Schliemann. These very things are still used throughout the middle and west of Europe. They could obtain very delicate threads with these spindles of wood and clay, as is evident from the smallness of the eye of several bronze needles. The finest textures have been destroyed under water as well as under ground; but a few specimens of the coarser textures, meshes of nets, thread, cord, and bundles of beaten flax, have been preserved in the mud of the *palafittes* of Bourget. The flax then used had small leaves, and differed from the kind now cultivated. To the weaving we may add the fabrication of baskets of rushes, reeds, and willow, and the making of fishermen's nets, and the large hurdles which were used to fortify the walls of houses in supporting the roof.

The local industry which has left the most traces in the bronze beds, besides the treasures and foundries, is the molding of clay. We have already noticed that the potteries of the stone age were not baked, but merely dried in the sun. The art of baking was introduced during the age of polished stone, and continued to be improved during the entire age of bronze. Still, the most ancient vases of that period were badly baked, very often burned on one side and raw on the other. It would seem that these potteries were cooked in the open fire and not under a reverberatory furnace, which, indeed, was the case. The dishes and plates showed few signs of the fire. It was only toward the end of the bronze age, when iron was already beginning to supplant it, that the potter's wheel was used. As simple as was this revolving machine, it afforded certain facilities of fabrication which were formerly unknown. The progress seems to have been made only after the appearance of iron. The various kinds of vases fabricated by processes so elementary were astonishing. Some were used for carrying water, others for preserving and cooking food. There were also some drinking vases, among which are the rhytons,* and lamps in imitation of the old Greek and Roman lamps, rings of clay used as rests for small-cased vases, and perforated cheese-molds, as in our own day, which shows that men in olden times were fond of the product of the dairy,

With regard to the ornamentation of pottery, it has received special attention from scientists; for it has afforded, during the bronze age, transformations useful in chronology, which are found on contemporaneous bronzes. The rough pottery of the stone age was ornamented by straight lines engraved thereon, with zigzags more or less irregular. In course of time these lines became more regular, and are drawn parallel by means of burins with several points; consequently, the figures are more accurately made. The use of concentric rings may be noticed throughout Europe during the bronze epochs. The plain cross, the multiple and four-pointed cross, the encircled cross in shape of a wheel, stars, and triangles appear regularly in successive years.

The figures are no longer merely engraved with pointed instruments; they are also impressed with stamps of metal, clay, or stone. The swastika (a species of cross with curved arms), and the meandre, which is made up of a succession of swastikas, are to be met with, especially during the period of transition from bronze to iron. During the first iron age, and further on in historic times, this figure was popular with the people of the Aryan race, and appeared in the West after the bronze era. It was about this time that the potters began to paint certain vases with red or yellow ocher, or with that black which afterward became peculiar to Grecian ceramics. Lastly, the inhabitants of the lacustrine dwellings used a sort of decoration which was, however, afterward abandoned. On the dark bottom of some vases of fine clay, they fastened thin sheets of pewter cut in narrow strips, with resin, and formed a variety of beautiful designs. Metallic ornamentation, no doubt, had its origin in the West. The industry of bronze characterizes the period now under consideration. In speaking of the foundries, we made slight mention of the material of the founders; so far there has been found but a small piece of brass, and nowhere in Europe has a furnace or any instrument for extracting metal from ore been found. We may, therefore, be justified in supposing that the metal was brought from the vicinity in its rough state, or already molded. In fact, ingots of bronze are found wherever the founders were stationed; they are in the form of small squares, or like hammers having a hole in the center to hang them up by.

We should recollect that no pure copper† is found—very little tin—while throughout Europe bronze is of uniform composition. The following is obtained from the analysis made by Messrs. Wibel and Fellenberg, and by M. Damour: The proportion of tin is about ten per cent, but there are exceptions, as in cold-chisels, and one or two other objects of hard bronze, which contain as much as a quarter of tin to three quarters copper. This uniformity of composition of alloy throughout Europe proves the unity of its origin and importation; but of this, further on.

Researches have brought to light besides ingots and refuse castings of metal, a number of molds made of schist, steatite, freestone, baked clay, and bronze. Many of these have figures on two or four sides, and on some of them there are several figures alongside of each other. The crucibles are made of earth mixed with broken quartz, and often contain metal. Some have the shape of the laboratory crucible, while others are like cups with handles. All these receptacles could contain but a small quantity of metal; their form and dimensions are pretty much the same throughout Europe.

The articles, made by means so rudimentary may be divided into three classes, namely, tools and utensils, arms, and ornaments. Among the first may be included the hatchets first made similar to stone hatchets, with holes for the purpose of inserting a handle, which was fastened in the socket with a cord. We are able, considering the superposition of the layers in the lacustrine habitations and stations, to follow these transformations, and determine their relative epochs. Scissors, knives, chisels, sickles, handles, saws, gimlets, jewelers' pincers, are the tools usually found in all the strata. We may also add razors, which were first made of hard stone, then of bronze, which are finally supplanted by iron ones. These instruments were not of the same shape as they are to-day; they were semi-circular with the edge on the side of the curve. Then there were some double ones edged on both sides of their diameter, and fastened to an ornamented handle, forming together but one piece. The different razors will enable us to ascertain the relative age of the strata in which they are found.

Was the horse domesticated at the appearance of bronze? It is probable that he was tamed during the period of polished stone, and yet it is possible he may have been long before. If he was then only in a wild state, it would be difficult to explain the quantity of bones which are found in certain places of the first period of stone, as in Polutré. This station, which is not far from the Saone River, above Macon, contains, it is said, the skeletons of 100,000 horses, most of them young, which may have served as food for the inhabitants of the place.

Be it as it may, the bronze bits found among the piles of the lake of Briene and afterward in France, bear witness to the fact that the horse was already subdued. The oldest of these bits are made of two movable pieces, one above the other, in the center of the animal's mouth. Soon after, the four pieces are movable, although each of the exterior pieces has a cross-piece through the middle, thus forming two equal branches. The second class of bit characterizes the *terramares*, and has been learnedly studied by Count Gozzadini. It seems that in the stone age the horse, half-tamed, was used as food for man; that, being subdued in the second period, he was mounted and perhaps harnessed; and finally, at least in Italy, at the end of the bronze age, he became tame enough to be guided about with a string.

Arms do not form the least interesting portion of our bronze collection; they perhaps better than any thing else enable us to determine the successive phases of this metal. They are found everywhere in Europe and Asia; but they should not be attributed to Gaul as has been done. The *palafittes*, foundries, and treasures have given them their definitive place in the bronze age; and if they appear only in small quantities, owing to the scarcity of the metal, they soon become so abundant as to supplant entirely the arms of stone. Later on, iron is found in many places in Europe, but in small quantities, and is regarded as an object of luxury. It soon after exercises, in its turn, an appreciable influence on bronze arms, the form and size of which are modified. Finally, bronze is entirely abandoned. The blade of the swords and poniards of the early part of the bronze age was of metal, but not the handles. Often, in these primitive arms, the tongue of the blade does not go far into the handle; it is broad, short, and pierced with two or more holes, through which the iron rivets pass. Afterward, metal handles are made, either without a guard, or one in the shape of a cross. Switzerland, Denmark, and Sweden have produced swords with antennæ, that is to say, with two prongs jutting out and curved at the end of the handle above the hand. The long swords, the length of which is often two feet and a half, which are to be found throughout the West, had handles made of horn, wood, and bone, and resembled the iron sword which soon replaced them. In France, there have been discovered 650 swords and poniards of bronze; in Switzerland, 86; in Sweden, 480; and they are generally found throughout Europe.

The dolmens and sepulchral caves of Lauguedoc and Vivarais, the *palafittes* of the lakes of Neufchatel and Varesa, have produced arrow-heads similar to those of silex which had preceded them, and used up to the transition from stone to metal; they characterize this epoch as the razor characterizes the transition of bronze to iron. These small pieces of metal were flat, being fastened in the shaft with a cord.

It is during the second period of the bronze age that armor is made of metal, as helmets, shields, and cuirasses; prior to this time, they are made of leather and wood. This is the period that M. de Mortillet designated by the term "Chandronnerie," the art of enlarging and shaping iron under the hammer, being added to that of molding. This method was used not only in the manufacture of armor, but also in the edging of arms and tools and of a multitude of ornamental objects. The latter outnumbered the former, especially when metal was rare. Pins are picked up by hundreds. The foundry of Larnaud has furnished 214 bracelets, the lake of Bourget more than 600, and a great number have been found in the dolmens of Central Europe. The oldest are oval, the latest are round; those which date from the bronze epoch are open, but are closed as soon as the industry of iron is general. The large collar rings, called *torques* by the Romans, are not found until after the appearance of the latter metal; finger-rings are scarce throughout Europe, but plain rings, necklaces, and buckles are everywhere found in large quantities; there are, besides these, many other ornaments or amulets, such as ear-rings, fillets, etc., which evidently have a symbolic character. Let us here note that these symbolic figures are about the only signs of any religion during the bronze epoch. We may add that they are not indigenous, but are doubtless derived from Asia, as also the cithern, which is made of hollow reeds, with nine or twelve rings fastened at the end of a stalk of wood. There are several in existence, two of which were found in France, three in the lake of Bourget, the others in Christiania, at Vladimeer, and Yavorlan. These citherns are not like those of Egypt, but like those of the priests of Boodha, who themselves hold them of an ancient Aryan tradition.

(TO BE CONTINUED.)

* From the Greek, *ruton*, a drinking-glass, whose contents, in certain ceremonies, were poured into the stream.

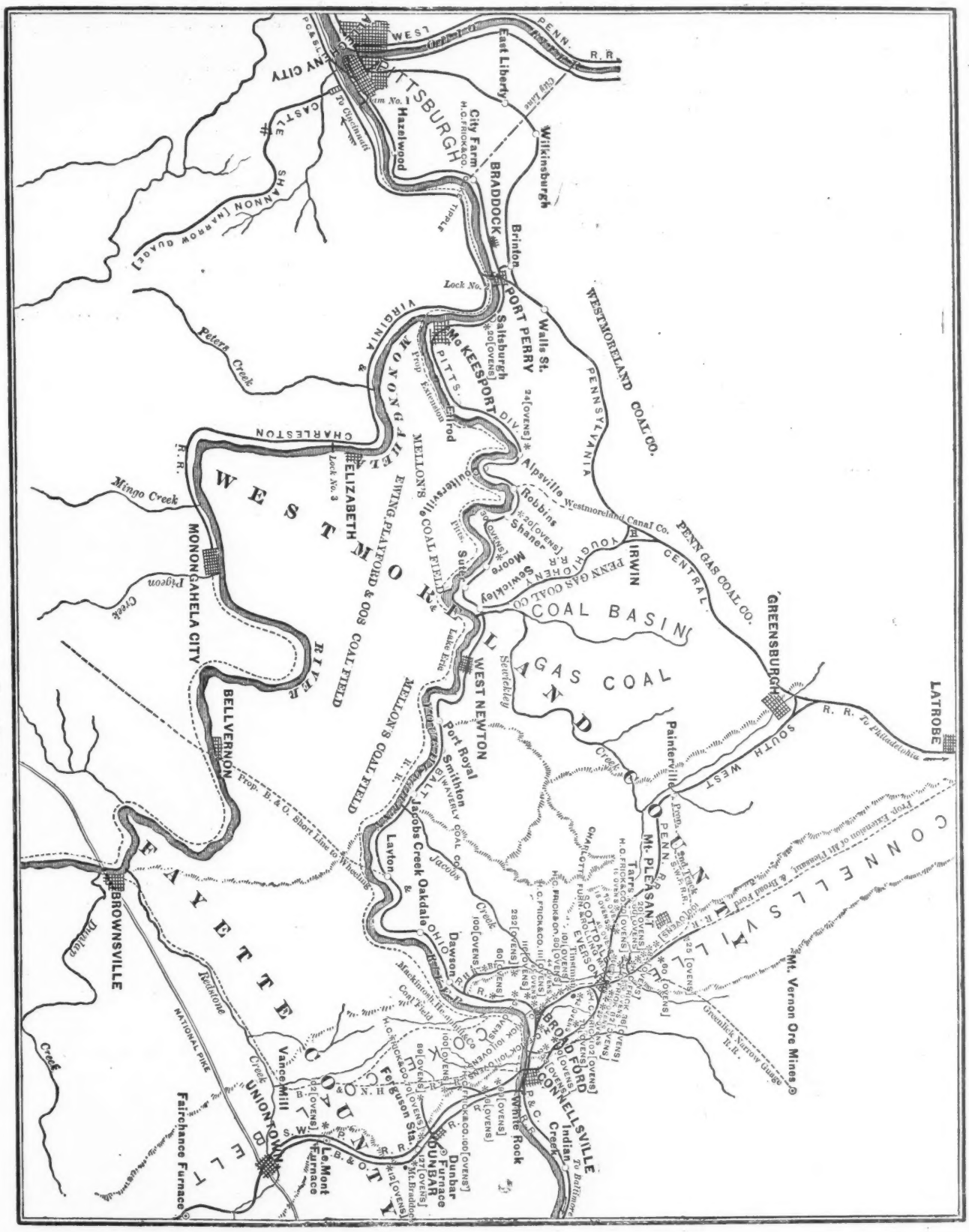
† It appears that in Hungary and Greece many specimens have been noted.

PUMPING GOLD.

At the Union Iron Works in San Francisco, a large Morcan gravel-pump is now being built, which will be shipped to mines near Barbacoas, in South America, for working the auriferous gravel deposits, which are known to be very rich, in certain rivers there. This machine has a suction-pipe fourteen inches in diameter, and will be driven by an engine of 100 horse-power. The company claims, on the basis of working tests in this city, that such a pump has a capacity of raising 32,400 cubic yards in twenty-four hours, one half of which may be solid matter, cobble-stones, gravel, sand, etc., if the bulk of the suction-pipe be kept near the material to be raised. Mr. Morcan's pump differs from other centrifugal pumps, in that it has no valves, contractions, nor obstructions of any kind, giving a continuous flow, free from stoppages, heating, or other cause of trouble. The company proposing to operate in South American rivers has examined many dredging-machines in this country and abroad, and has finally selected the Morcan pump, as offering better results than any other. A company has recently been incorporated in this State for working the bed and bars of Feather River, at Oroville, with similar pumps.—*Alta.*

THE CONNELLSVILLE COKE REGION OF WESTERN PENNSYLVANIA.

Of the coking coal-fields of the United States, the one which enjoys the most enviable reputa'ion is the Connellsville. It is situated in the southwestern part of the State of Pennsylvania, lying mainly in the counties of Westmoreland and Fayette, and some 50 to 60 miles from Pittsburg. The field occupies a triangle some 3 miles wide and 50 miles long, almost without a fault, the beds yielding 8 to 9 feet of workable coal. Geologically speaking, the coal-bed from which, practically, all the so-called Connellsville coke is manufactured, is the Pittsburg bed of Prof. Rogers's *Report of the First Geological Survey of Pennsylvania of* 1842, and is described in the second volume of the "Final Report of 1858." The present, or "Second Geological Survey," is devoting a great deal of labor to this coal-field, and the reports that have been published contain much valuable information. We are greatly indebted to these reports, and especially reports L and KK, for data embodied in this article.


PITTSBURGH
East Liberty
PENN. R. R.
Wilkinsburgh
BRADDOCK
Brinton
PORT PERRY
Walls St.
Saltsburgh
McKEESPORT DIV.
Alpsville
Robbins
Shaner
Moore
Sewickley
IRWIN
PENN GAS COAL CO.
WESTMORELAND COAL CO.
PENNSYLVANIA
GREENSBURG
LATROBE
COAL BASIN
Painter's Hill
Mt. PLEASANT
CONNELLSVILLE
Mt. Vernon Ore Mines
BROAD FORD
Dunbar Furnace
Fairchance Furnace
Le Mont Furnace
UNIONTOWN
BROWNSVILLE
BELLVERNON
MONONGAHELA CITY
Port Royal
Smithton
Jacobs Creek
Layton
Dawson
Mt. Braddock
Ferguson Sta.
Vance Mill
Redstone Creek
Peters Creek
Mingo Creek
Pigeon Creek
Indian Creek
White Rock
Prop. B. & O. Short Line to Wheeling
To Baltimore
NATIONAL PIKE
Prop. Extension of Mt. Pleasant & Broad Ford R. R.
Greenlick Narrow Guage R. R.
R. R. To Philadelphia
Lock No. 1
Lock No. 3
City Farm
Hazelwood
Tripoli
Prop. Extension
Elrod
Outlaw's
Sutton
Tilton
Lake Erie
Scratchley
Tinsman
Jacob's
Mackintosh-Hemphill Coal Field
Prop. Extension of Mt. Pleasant
Westmoreland Canal Co.
Penn. R. R.
Pittsburg & Connellsville R. R.
Pittsburg & Western R. R.
Pittsburg & Lake Erie R. R.
Baltimore & Ohio R. R.
Ohio River
Monongahela River
Youghiogheny River
Allegheny River
Pittsburg & Castle Shannon R. R.
Pittsburg & Elizabeth R. R.
Pittsburg & Charleston R. R.
Pittsburg & Virginia R. R.
Pittsburg & Fairmont R. R.
Pittsburg & Baltimore R. R.
Pittsburg & Youghiogheny R. R.
Pittsburg & Connellsville R. R.
Pittsburg & Monongahela R. R.

quired. The average output per annum per day is 8 to 10 wagons, the pay being 25 cents per wagon.

The coal is bituminous, with generally a dull resinous luster, alternating with seams of bright, shining crystalline coal, coated with a yellowish silt. It contains numerous particles of slate, and some crystals of pyrites. It is compact, with a tendency to break up into cubes. Such a coal, from the mines of Messrs. H. C. Frick & Co., at Broad Ford, is taken by the Pennsylvania Geological Survey as the typical coal of the Connellsville basin. Its analysis, as determined by Mr. McCreath, chemist of the survey, was:

Water	1·260	Ash	8·233
Volatile matter	30·107		
Fixed carbon	59·616	Total	100·000
Sulphur	·784		

Color of ash, reddish gray; coke per cent, 68·633; sulphur left in coke, 0·512.

Percentage sulphur in coke	·746	Percentage carbon in coke	87·250
ash in coke	11·995		

The coke from this region is of silvery luster, cellular, with a metallic ring, tenacious, comparatively free from impurities, and capable of bearing a heavy burden in the furnace. Its porosity and ability to "stand up" in the furnace are what have given it such a reputation for a blast-furnace fuel, and have created such demand for it for mixing with anthracite and bituminous coal in the East and West, especially where an open iron, such as is used in the Bessemer process, is needed.

Mr. Peeler, assistant engineer of the Cambria Iron Co., Johnstown, Pa., has prepared, under the direction of Mr. John Fulton, Chief-Engineer, a table showing the result of a very elaborate and ingenious series of experiments on the physical properties of coke for furnace use, embracing the typical coke coals of Pennsylvania. Relative to these points, that is, their porosity and power to bear the burden, the result is as follows:

In the following tabulated summary of the results, the first column, A, states the kind of oven used; B, the percentage of cells; C, the resistance to compression per cubic inch, in pounds; and D, height of furnace charge which can be supported without crushing:

	A.	B.	C.	D.
Connellsville, 72-hour	Beehive	38·47	284	114
Bennington, Miller coal	Open pit	32·32	281	112
Hollidaysburg "	Belgian	31·20	259	104
Connellsville, 48-hour	Beehive	33·08	240	100
Gap Furnace, Miller coal	Belgian	33·43	248	100
Johnstown, 24-hour	Belgian	43·20	245	99
Kemble C. & I. Co., Broad Top	Beehive	41·73	240	96
Broad Top	Open pits	38·75	220	88
Rock Hill C. & I. Co., Broad Top	Open pits	41·31	200	80

From this it will be seen that the coke from the Broad Top coal gives an average of the highest per cent of cells, but its resistance to compression is much lower than that of the others, while the 72-hour Connellsville coke sustains the highest furnace charge, and is, at the same time, quite high in its percentage of cells, the cell-space being to the whole mass as 38 to 62.

In coking the coal, the beehive oven is in universal use in the Connellsville region. These ovens vary, at the different works, from 11 to 12 feet in diameter, and from 5 to 6 feet in height. The working is very simple. The coal is dumped through an opening in the crown of the furnace, and spread evenly on the floor, to the average depth of 2 feet for 48-hour coke and 2½ feet for 72-hour. The front opening, through which the coke is discharged, is at first nearly closed with brick, luted with loam. The heat of the oven from the previous coking fires the charge, and as the coking progresses, the air is more and more shut off by luting the openings, and finally closing the roof openings. The average charge is 100 bushels of coal at 76 lbs., and the yield in coke 120 bushels at 40 lbs., making the percentage yield 63, or 1·6 tons of coal to 1 ton of coke. The average time of coking is 48 hours, with 72 hours for that burned over Sunday; 24-hour coke is sometimes made. The 72-hour coke is a firmer coke than either of the others, but it is questionable whether it is a better furnace coke. When the coke is thoroughly burned, the door is removed, and the coke is cooled by water thrown in from a hose, and then drawn.

The object of coking is to drive off the water, the hydrocarbons, and the volatilizable sulphur, and leave in the coke the fixed carbon, with which the ash and what of the sulphur is not volatized remain. We have given an analysis of what was regarded as the typical coal from this region, from the mines of H. C. Frick & Co., at Broad Ford. The analysis also gave the results of coke in the laboratory. A sample of the coke from these mines, made in the ovens of the firm, analyzed by Mr. McCreath, gave the following results. The coke is exceedingly coherent and compact, with silvery luster, and contains some slate:

Water at 225 degrees	·030	Sulphur	·821
Volatile matter	·460	Ash	9·113
Fixed carbon	89·576		
		Total	100·000

Mr. Platt, in his report on coke, takes this as the typical coke, "as being thoroughly burned and as well made as can be produced in the Connellsville basin." Probably the most thorough analyses of the coke from this region were made by Mr. J. Blodgett Britton, of Philadelphia. The analysis given below is the result of an average of a large number of analyses, and may be taken as the average of the Connellsville coke:

Moisture	·490	Phosphoric acid	·029
Ash	11·332	Carbon, by difference	87·456
Sulphur	·693		

Mr. Pechin gives a verified analysis of this coke as follows:

Volatile matter	1·296	Alumina	3·262
Carbon (hydrogen and nitrogen)	89·147	Sesquioxide of iron	·479
Ash	9·523	Lime	·243
Water at 125° C.	·032	Magnesia	·007
Sulphur	·084	Phosphoric acid	·912
Ash ignited:		Potash and soda	traces.
Silica	5·413		

It is difficult to arrive at the cost of coking, as it varies somewhat at the different ovens and at different mines. In the report of the Pennsylvania General Survey for 1875, is an estimate from the ovens of Mr. John F. Draro, which is as follows:

100 bushels coal	$1.00
Hauling and putting in oven	1.00
Drawing and loading	.70
Total	$2.70

This will produce 120 bushels of coke, and make the cost per bushel 2¼ cents. While this may be a fair estimate of the cost, it does not seem to be distributed correctly in the details. Messrs. H. C. Frick & Co., who are the largest manufacturers in the region, have furnished us the following estimate:

In engaging in the manufacture of coke, no one should have less than 200 acres of coal to 100 ovens. Coal advantageously located can not be had for less, on the average, than $400 per acre, and the ovens, with all the necessary plant, can not be built for less than $40,000. Then we have:

200 acres coal, at $400 per acre	$80,000
160 ovens complete	40,000
Total cost	$120,000

At least 8 per cent per annum interest should be expected on an investment of this character, which gives us:

Interest	$9,600
100 ovens use per annum fully 7 acres of coal, $400	2,800
Total cost	$12,400

So it will be seen that at least $12,400 should be first made yearly out of an investment of this kind, to pay interest and make up depleted capital. It is not possible to make, on an average, more than 39,000 tons of 2000 pounds each of good coke with 100 ovens, and by the above figures it will be seen that it will require about 32 cents per ton to cover interest and replace capital.

At the best-arranged works in the Connellsville region, and at the present prices of labor, the cost of manufacturing a ton of 2000 lbs. of coke is as follows:

Mining coal for 1 ton of coke	$0.38
Drawing coke	.25
Loading, hauling and incidentals	.10
Repairs	.10
Total	$0.83

For the total we have:

Interest on the capital allowance for coal used, per ton	$0.32
Cost of manufacture, per ton	.83
Total, per ton	$1.15

The above calculation is, if any thing, too low, as the $40,000 invested in ovens, etc., is lost when the coal is all gone, and the cost of manufacture will increase as the front coal is used up. This calculation is based on coal that will drain itself.

The statistics of this trade are surprising. The manufacture began in the winter of 1841-2. In the spring of 1842, enough coke had been made to load a coal-boat 90 feet long, which was run down to Cincinnati, and the coke sold with considerable difficulty. Miles Greenwood, the well-known foundryman, was the purchaser at 6¼ cents per bushel. According to the latest information we have, there are 3668 ovens in the Connellsville region, and nearly all are in operation. Over 1000 of these are owned or their product controlled by H. C. Frick & Co.

Before 1865, the demand was mostly local in the Pittsburg region; but from that time the growth of the business has been sudden and rapid, and the extent of territory over which it is sent constantly increasing. For smelting the ores of the precious metals, it is sent all over the West at an enormous expense for freight, $17 a ton in some cases on a material that has sold, in 1878, at $1 a ton, loaded on the cars at the ovens. In blast-furnaces, for iron smelting, it is used all over the country, from Lake Champlain in the East to St. Louis in the West. Nearly all the pig-iron for the Bessemer process is smelted entirely with coke, or with coke entering into the mixture of fuel.

The success attained by the use of coke in connection with anthracite in blast-furnaces, is remarkable. The output is very largely increased, the pressure of blast reduced, and as good an iron produced. One of the most successful applications of coke has been its use in stove foundries. Coke works hotter and melts in a much shorter time, giving less waste in the furnace, and less losses for bad castings. On account of the small percentage of sulphur and the rapid melting of the iron, a large percentage of scrap can be used.

As showing the percentage of coke, we give the following tables of shipments, which really are tables of production, as no stocks are carried. The figures are net tons of 2000 lbs.:

	River.	S'thwest.	B. & O. Brinton.	Total.		River.	S'thwest.	B. & O. Brinton.	Total.
1875	46,240	511,710	108,545	666,495	1877	165,940	598,783	104,706	869,429
1876	125,000	496,543	149,215	770,758	1878*	106,060	386,060	45,936	538,056

* January to July only.

The accompanying map well shows the location of the ovens, the railroads, present and projected, by which the region is in communication with Pittsburg and other manufacturing centers, the location of blast-furnaces and the means of water transportation.—*Iron Age.*

SEPARATION OF ZINC AND NICKEL.—F. Beilstein.—The sufficiently diluted solution of the nitrates or sulphates is mixed with ammonia till an alkaline reaction is obtained, and then acidified with pure citric acid. When the solution is perfectly cold, sulphureted hydrogen is introduced till the liquid has a distinct smell, which is generally effected in five to ten minutes. If much zinc is present, sulphureted hydrogen is introduced for five minutes at a time, letting the liquid stand after each introduction, and repeating this till the smell of the gas does not disappear on standing. In this manner we avoid a needlessly long treatment with sulphureted hydrogen, by which traces of nickel sulphide may be carried down. The precipicate of zinc sulphide is allowed to stand for twenty-four hours in the cold, and is then weighed as such. The filtrate is evaporated to a small volume, and after supersaturation with ammonia the nickel is thrown down electrolytically, in which operation care must be taken that no sal-ammoniac is present, as it hinders the precipitation of nickel. The soultion should be a nitrate.—*Berichte der Chem. Gesellsch. zu Berlin.*

SAN JUAN (COLO.) SILVER MINES.

Special Correspondence of the Engineering and Mining Journal.

The principal events that have occurred in San Juan during the past year are as follows: The organization of the Crooke Mining and Smelting Company, with a capital stock of $1,200,000. Its property consists of the famous Ute and Ula mines and various mines of lesser note, and the smelting works of Lake City. The Messrs. Crooke Brothers, who are known all over this section as honorable, square-dealing gentlemen and the earliest and best friends of San Juan, are the managers of the reduction works, and Mr. S. W. Hill, late of the Lake Superior mines, and having an experience of upward of thirty years in silver and copper mining, is mining superintendent. The completion of the Norfolk (Va.) & Ouray Smelting Company's works and the Windham Smelting Company's works at Ouray, and their perfectly successful trial runs. The purchase by the Norfolk & Ouray Smelting Company of the Begole "Mineral Farm" for $75,000 cash, and the commencement of taking out the ore. The completion and running of the San Juan Reducing Company's works (chlorination) at Gladstone, near Silverton, J. H. E. Waters, Esq., E.M., President and Manager. The commencement of the erection of large reduction works at Silverton by the Crooke Brothers. The election of Frederick W. Pitkin, Esq., a mine-owner from Ouray, to be Governor of the State of Colorado.

I think that one of the most paying enterprises that could be gone into here now is the erection of concentration works *at* the mines. What is it that holds so many of our mines back? Simply the price of packing ore to the mill and the rates charged for milling; that is, want of roads and more reduction works, so as to create some competition for the ore. Now, if we could concentrate our ores at the mines, say five or ten tons into one, we are at once independent of local reduction works, and can afford to ship our concentrate to Senator Hill's works at Denver, to New York, or even to Swansea, for that matter. It would just be the difference between paying freight and milling on one ton of metal instead of on four or nine tons, as the case may be, of worthless gangue, containing the one ton of metal. I think that a sum of $40,000 cash would build a concentrator, of 50 tons' capacity per diem (in the midst of the mines of the Sneffles district), build a good nine-foot road with plenty of "turn-outs," from the end of the present Ouray and Sneffles toll-road to the mill-site (4 miles), and leave $15,000 in hand to buy dumps and ores, although that is a far larger sum than is actually necessary, as there is a ready market for the concentrate at Ouray. This is allowing $20,000 as the cost of the works in running order, and $5000 for the road, which latter in itself would be a paying investment.

This concentrator should be at the forks of Imogene and Sneffles creeks, where it would command the whole of Sneffles, the acknowledged richest district in San Juan, that is, the mines of Imogene, Virginius, and Sneffles basins: the whole of these mines are within four miles of the mill-site and *above* it. I believe if all the claims in these basins which at this writing will produce 100-ounce ore were worked by two eight-hour shifts each, they would produce 150 tons per diem; and if all the claims that will now produce 50-ounce ore were worked by the same force, they would produce 250 tons per diem. Of course this is only an approximate estimate; but I am making a very liberal allowance for "lean places," which occur, of course, in the best of mines. As soon as these works were built, we could almost afford to produce 30-ounce ore, as it would pay working expenses, and *without* concentrators it will be years before this can be done. This is allowing $15 per ton for concentrating (which we would gladly pay), $5 for hauling, and $10 for producing. Nor need the owners of the concentrating works be dependent on custom ores for treatment; for claims are so plentiful that for a few hundred dollars they could easily purchase a couple (that is, if they didn't let the owners know *who* was buying) that would, if properly worked, keep them running at full capacity. Suppose at a cost of $10 per ton they concentrate 50 tons of 50-ounce ore per diem into 10 tons, having produced the same and hauled it to the mill at a cost of $20 per ton, they would have per diem 10 tons of 250-ounce concentrate, at a daily cost of about $1500. The mill-site is at the junction of two never-failing streams, protected from the elements by precipitous mountains on each side, and in the midst of dense and heavy pine timber; altitude, 9400 feet above tide-water, only 200 feet higher than the town of Silverton. It now costs us in the Sneffles district about $15 per ton for producing, $15 for packing, and $45 for milling. This is proof enough of how badly we need concentrators *at the mines.*

The ENGINEERING AND MINING JOURNAL, whose correspondent I have the honor to be, charges nothing for this information, and, appearing in its columns, it is therefore reliable. This being the case, perhaps capitalists will think it worth their while to *come and see.* But, for mercy's sake, let them be possessed of ready cash; and if they don't understand the business themselves, let them bring "an honest and competent mining engineer" with them. We've had an awful dose already of amateur mill-men and miners, reduction works run "on tick," and "single-blanket capitalists."

Now as to when to come. If you come in June, you can't see any thing, as the snow is not off the mountains, and you can not get to the mines. If you can stand any amount of rain and mud, come in July; if you can't, put it off till August. September is sure to be fine, and most of October. The Denver & Rio Grande Railway now runs to Alamosa, which is 60 miles from Del Norte, the gate of the San Juan mines. Comfortable stage-coaches the rest of the way.

Up to this date (January 28th), the coldest day we have had up here (11,200 feet above sea level), the mercury stood at 2° below zero at daybreak. For the week ending January 24th it ranged betweeen 22° and 30° at daybreak, and at noon-day, during that week, it stood at 58° in the shade, and went up to 82° in the sun, and the chipmunks and squirrels woke up and came out to see "what was up."

What mining property my partner and I have here is not for sale. We mean to keep it and work it; but I want to get capital into the country to develop it, in roads, reduction works, ranches, working mines, or any other shape, and I endeavor in your columns to give correct information on these heads. To the above end, an old friend of mine, Mr. Beverley R. Keim, of 1311 South Broad street, Philadelphia, is helping me, and I am constantly sending him specimens of all our best ores, which, I have his permission to say, he will gladly show to any one who calls, and who may have their attention turned toward San Juan. Mr. Keim is perfectly independent of mines or mining, is well known in Philadelphia, and any information he gives is good to "bet on." W. W.

OURAY, February, 1879.

PACIFIC COAST MINING MATTERS.

From an Occasional Correspondent.

To an outsider, the stock market looks amusing of late. Flood & Co. are at their expert game again, turning a few points on stocks, and nobody knowing of any reasons either for the advance or the set backs, miners working in the mines included. For a long time, rumors were out about how Yellow Jacket would go up, on completion of its big shaft, how large quantities of rich ore were concealed in breast-boarded drifts, etc.; but no one could ever trace the rumor back to any individual or miner who had seen the ore. And yet, if such a thing is true, some of the miners working, or who did work, there, ought to know. But nobody appears to know a thing. Well, it is immaterial for what they term a broker's market, at the bottom of which lies a big broker, who crops his hay while the sun shines. We have seen a deal in it; a short, and to some extent, unsuccessful one, as every body believes, on a paper bonanza. Then came Savage and Hale & Norcross with their big bonanzas, on the favorite principle, where there is water there must be ore, and the hotter the water the richer the ore (what a big bonanza there must be at the geysers!). Following it, the usual litany of Sutro arrangements, forcing him to terms by a Russian bath, etc., parlance; a false alarm of completed arrangements, a disclosing of the bonanza in two weeks, etc.—all tending to induce the public to buy the stock. Up she goes and down she went; the big broker's scissors were busy. Now we are promised another Sutro compromise—in other words, another shave. We have forgotten the old dodge, and will have to learn it anew. In this way, short deals were created all along that end—and on what? The darkey would say, "Give it up!" Now come the North End stocks. As rumor will have it, a proposed consolidation of Union and North Consolidated; six shares of North Consolidated to receive one of Union. Now, it stands to reason that it costs the company less to simply sell a certain number of shares at an advanced price of say 30 to 40 per cent, to cover their original price paid for the stock and to make up for the stock to be given away. Some say, "Well, there is an improvement in joint Union and Mexican winze; soft ground, low-grade ore, etc." Well, fifty-cent ore is also low grade; and even if a statement comes of low-grade ore, the gambling public never thinks as to how many cents this low-grade ore contains; if more than wall-rock porphyry or not. Necessarily, Mexican goes up with it. And the only mines which have any ore at all, Sierra Nevada and Ophir, make up the tail end. There is no reason for those to go up; let them stand solid and firm; but the as yet paper bonanza stocks, they need help and strength. That has been, and is, the present Comstock game. One after another is put through the mill; with the aid of each one the public receives a certain amount of salubrious grinding, and will in future get it. They don't learn, and never will learn, as long as they have a four-bit piece to put up for a dollar share.

North Bonanza has a first-class bonanza—so we heard last November; a mill was to be rented, ore milled, and a big fuss was made about ore milled at Reno yielding about fifty-five dollars, which, as I learned, assayed about one hundred and three dollars. The same was repeated in December, big things were predicted, and an assessment levied on the strength of it; but as yet their bonanza is, like the Savage, a little "too thin," contrary to the statement of the so-called "Crack Expert of the Comstock," who paraded C street at the time with $700 assays and big talk. A few weeks ago he looked wise in Colorado, I hope with better success than when he reported to Flood the daily big assays of the Sierra Nevada. I hope our Eastern friends will look out for clap-trap talk, and recollect that in the West a man is gauged by the noise and show he can make.

Eureka looks better now than it has for some time. Richmond retains its good ore, with fine prospects. Bodie is excited with a new rich gold strike in Indian District, to which place a perfect stampede has set in. A specimen worth $100 in free gold was brought into Bodie on the 23d inst. Bodie District will not amount to much until spring has fairly set in. Tuscarora District seems stale at present. Big things were predicted, as usual, but I think an average of two or three months' patience is necessary, to judge from present appearances.

Paradise District develops its usual amount of wind, but too little real work is done to give a reliable character to the district, though many claims prospect well.

Reno District will probably come up some this summer; the Consolidated Esmeralda—Sam Curtis, superintendent—has lately been thrown on the S. F. Board. It has good indications and prospects. The Golden Fleece mine, which has been idle some time, parties propose to throw on the N. Y. Board this summer; likewise the Jones & Kinkead. The Brooklyn Company continues its thorough prospecting work, and will soon know what it has. It is on the eve of cutting its ledge on the 360-ft. level. The company consists of a few select New York gentlemen, who prefer legitimate prospecting to stock gambling. This company has done more work than any other in the Reno District, and is operated in a systematic way.

Some also talk of starting up the deserted Paymaster and Poeville mines, in this district.

Prospectors are very plentiful now, and some good must result from it.

CHROMIC OXIDE.—M. Audouin recommends chromic oxide as the most refractory material known for fire-bricks, crucibles, etc. It resists the highest known temperatures, and is attacked neither by oxides of iron nor by silica.

LIGNITE has been found in large quantities between Jaffa and the Dead Sea. This, with the asphaltum, also abundant, will enable Palestine to supply fuel to Egypt and Syria, both of which, having no wood, pay from £2 8s. to £2 16s. per ton for coal.

La Lancette Belge says that according to statistical returns, sulphate of copper has caused the death of 77 persons in Belgium during the last ten years. The phosphorus obtained from matches has proved fatal to 170, verdigris to 33, sulphuric acid to 30, and cantharides to 24.

PROGRESS IN SCIENCE AND THE ARTS.

General Science.

Gary's Magnetic Motor.—*Harper's* for March contains a long and cleverly-written article describing, as a matter of fact, and without comment, a magnetic motor, designed to be a substitute for steam, and which produces motion "by no external agency, simply by the magnetic power of the machine." This would be nothing less than the realization of perpetual motion, and it will be interesting to our readers to know that Mr. Gary bases his invention upon the practical application of the principle that he claims to have discovered, of the existence of "the neutral line, at the point of the magnetic field where the polarity changes, and which is antagonistic to the heretofore universally-accepted theory that magnetism is a static force." For a full account of this latest of the "new motors," we refer our readers to the issue of the *Scientific American* of March 8th, which reproduces the original article from *Harper's*, and devotes an editorial page to a very satisfactory *exposé* of the fallacies it contains, concluding its comments with the brief but pointed sentence that "the pretended motor is a deception to be classed with the Keely motor and like contrivances."

The same journal takes advantage of the occasion to express its strong disapproval of the course of such widely-circulated magazines as *Harper's* (and we might add of the newspaper press generally) in giving up their columns to the circulation of such unwarranted and unfounded assertions as those contained in the article just named, and which are calculated to mislead credulous readers into investments that are sure to entail bitter disappointments and pecuniary losses.

Spontaneous Generation.—Another contribution to the spontaneous generation controversy, favoring the germ theory, has just been published by Prof. Tyndall, in a paper to the Royal Society. He reports that he took with him to the Alps during the past summer one hundred flasks of infusions, 50 of turnip and 50 of cucumber, that had been prepared in the laboratory of the Royal Institution, and carefully sealed. Of these, 20 were broken in transportation, and were found to be swarming with organisms. Another lot was opened in an atmosphere in which sawdust had been shaken up, and was soon turbid with organisms; others were found to be infected by the proximity of a cascade of water derived from melting snow; while others that were opened in the pure air of the mountains were found to remain clear and uninfected. These results of Prof. Tyndall are entirely confirmatory of his previous experiments and announcements, in which he has always taken strong ground against the hypothesis of spontaneous generation advocated by Bastian and others, and has maintained the view that the origin of the swarms of organisms that make their appearance in decomposable animal or vegetable matter must be explained upon the supposition of infection from without, through the direct instrumentality of the air bearing the germs of these organisms into contact with the medium suited for their development. Tyndall, in the paper above referred to, places himself again on record as an opponent of spontaneous or non-parental generation.

Apropos of the Electric Light—any contributions to which subject can not fail to be of interest—we may report that Professors Houston and Thomson still continue their experiments and speak confidently of their ultimate success. One of their latest forms of apparatus was exhibited at the last meeting of the Franklin Institute. One of the points of superiority claimed in this construction is the avoidance of the unsteadiness of the flame, a difficulty which these gentlemen claim to have overcome, by devices which insure a uniform consumption of the carbons.

The Dissociation of the Elements is the heading of a very interesting editorial in the current issue of the *Chemical News*, in which Dr. Crookes discusses very philosophically the general bearings of Mr. Lockyer's late remarkable announcement of the decomposability of the so-called chemical elements. In referring our readers to the pages of that journal for his opinions in full, we give the tenor of the author's opinions in the following brief abstract: "Even at present, therefore, until some fact is shown to be irreconcilable with Mr. Lockyer's views, we consider ourselves perfectly justified in giving them our provisional adhesion, as a working hypothesis to be constantly tested by reference to observed phenomena."

Geology, Geography, Mineralogy, etc.

The Geological Surveys of North Carolina and Georgia have been suspended by the legislatures of those States. This is a step backward which amounts to an exhibition of lamentable short-sightedness on the part of the authorities. Both of these States are exceedingly rich in mineral deposits of unknown value and extent, and the knowledge that could be acquired concerning them by the expenditure of a few thousand dollars for the work of their geological surveys is the best and surest means of interesting the capital and enterprise of other States in developing their natural resources and building up their industries.

Very different from this short-sighted policy is the spirit manifested in the passage of a concurrent resolution of thanks to Prof. Hayden for his "accurate and comprehensive survey of the State of Colorado," which passed the Legislature of Colorado on January 14th, and upon which Senator Gaussion remarked: "These reports, coming from a scientific and authoritative source, do more to answer and satisfy the inquiries of capitalists than every thing else. They tell the world what the great Western country is made of. The Western domain of the United States is, to-day, the glory of the nation." North Carolina and Georgia might learn a thing or two from the youngest of the States.

The Discussion concerning Eozoon, whether it be of organic or mineral origin, and which has afforded many eminent paleontologists a theme of controversy of many years' standing, is not yet definitively settled; and the question, therefore, as to whether in this structure, found in the most ancient stratified rocks of the earth, we have really the relics of an organized being, is still an open one. The latest contribution to the nature of Eozoön is a contribution from Dr. Karl Möbius in *Paleontographica* for 1878. This investigator, whose studies of recent *foraminifera* give weight to his opinion, asserts that the columns of the Eozoön limestone which Carpenter and Dawson take to be the casts of a canal system of the "intermediate or supplemental skeletons," are simply casts of fissures in the mineral masses, of various unsymmetrical forms, bearing no resemblance to the tubules of any organic being. The fibrous material found between the serpentine and the calcareous masses, and supposed to be casts of the canals of the chamber-walls of Eozoön (similar to those that exist in the *foraminifera*), Möbius holds to be simply an aggregation of prismatic crystals of crysolite. No tube-walls or interspaces could be detected under the microscope, either with or without polarized light. The *American Naturalist* for March will give our readers fuller details of this investigation.

A Scientific Excursion of exploration to the head-waters of the Yellowstone and Big Horn rivers is reported to be fitting out at Yankton, Dakota, under the direction of Dr. W. A. Burleigh.

There is no longer any doubt as to the commercial value of the new sea route to Siberia, opened up by the voyages of Nordenskjöld. The *British Trade Journal* reports the recent voyage of a Russian steamer, accompanied by the barge Moskva, from Cronstadt to the important town of Yeniseisk, 2500 versts up the Yenisei River; while the steamer Lena has advanced about 3800 versts up the river Lena to Yakootsk. Our authority believes that "the enterprise of Nordenskjöld will have important consequences," and that "it may be affirmed that all the principal rivers of Siberia are now open to European commerce."

At a Recent Conference on the Civilization of Africa, held at Brussels, under the presidency of the King of the Belgians, it was stated that the leadership of the contemplated Belgian Exploring Expedition, now in course of organization, would be conferred on Mr. Stanley, who was present at the meeting.

Capt. Howgate's supplementary memorial to Congress, setting forth the advantages to be derived from the establishment of a Polar colony on the borders of the great Polar basin appears to have been of no avail. In view of the growing interest shown by other nations in the furtherance of geographical exploration, this action is to be regretted.

The Great Gold Medal of the Paris Geographical Society for the year 1879 has just been presented, by unanimous vote of the Society, to M. De Brazza, for his important work during the last three years in exploring the river Ogowe in Western Africa.

Chemistry, Physics, and Technology

Concerning the Newly-Discovered Metallic Element Philippium, a brief account of which appeared in this department, Mr. W. G. Brown, in a note to the *Chemical News*, reports that in the course of an analysis of the mineral sipylite, made a year or more ago, he observed the presence in the spectroscope of certain lines, of which at least one was identical with those described by Delafontaine as characteristic of the new element.

A Remarkable Case of Cohesion, or the welding of two metals at a temperature far below the melting-point of either of them, has lately been noticed by Mr. Charles A. Fawsett, of Glasgow, and by him reported to Sir William Thomson. He describes the following experiment, which any of our readers who are curious enough can readily try, to test its correctness. If a piece of silver, one centimeter square, is heated on the inverted lid of a porcelain crucible, to about the temperature of 500° C. (932° Fahr.), and the end of a thin platinum wire is brought into contact with it, the two metals will be found to have welded to that extent that the silver may be raised from the lid, and will remain attached to the platinum wire when cooled off. Mr. Fawsett reports that other metals—copper and aluminium, for example—will likewise adhere to silver, though the experiment is less striking than in the case of platinum.

For the Quantitative Estimation of Nitric Acid, which is a troublesome and difficult operation to the analyst, Pfeiffer recommends the method of Persoz as capable of giving very accurate results when employed with proper precautions. The method, it will be remembered by our chemical readers, involves the fusion of the nitrate with potassium bichromate, by which the nitric acid is expelled and its amount estimated by the loss in weight. The procedure recommended by Pfeiffer appears in full in the *Archiv d. Pharmacie* for December, 1878, and in abstract in *New Remedies*, for March, 1879.

A New Reaction for the Detection of Cobalt is reported in the *Chemical News* as the suggestion of Mr. T. Tattersall. He adds, to a solution of a cobalt salt, cyanide of potassium, until the cinnamon-colored precipitate that forms is dissolved up in a slight excess of the reagent and a clear yellow solution is formed. To this he adds a few drops of *yellow* ammonium sulphide (colorless ammonium sulphide will not do), which produces a blood-red coloration, even in the presence of nickel, or of any soluble cyanide except the copper compound.

Artificial Benzoic Acid is at present manufactured in large quantities from the naphthaline that is abundantly found as a by-product in the gas works.

The Efficiency of Creosote as a Preservative of Timber against the ravages of the teredo has been signally established by the recently published report of a commission appointed by the Royal Academy of Sciences of Amsterdam to make a thorough investigation of the subject. This commission selected several of the ports of Holland in which to conduct their experimental trials, and subjected to their tests oak, red fir, common fir, and pine, in pieces about three feet long and twelve inches square. They found that all external applications, such as coal-tar, paraffine varnish, mixtures of tar, resin, sulphur, etc., were absolutely worthless. Mechanical protection, by the use of nails, was found to be only partially efficacious, and, with the use of copper or iron sheathing, too expensive for ordinary use.

Impregnation with various materials was also fully experimented upon, and, as against this element of destruction, with the single exception of creosote oil, all proved to be either completely or almost worthless. In this category are named sulphate of copper, copperas, acetate of lead, salts of mercury and arsenic, soluble glass, chloride of calcium, and paraffine oil. Only the blocks treated with creosote oil were found at the end of two years to have remained uninjured. The commission thereupon draw the conclusion that the only effective preservative agent for timber against the depredations of the marine boring-worms is creosote properly applied and of good quality.

We had occasion some time ago to call attention to an interesting ex-

periment of Mr. E. R. Andrews, who prepared slabs of pine wood in such a manner that one side was impregnated with creosote, the other side being left untreated, and the slabs then exposed for an entire season in the waters of the Gulf of Mexico. The result, it will remembered, fully confirms the correctness of the conclusions of the before-named commission, while his experiment was, perhaps, more striking and instructive than any of the tests of the former; for the slab in question was completely riddled by the teredo clean up to the line of the creosoted portion, which was left severely alone.

Vegetable Isinglass, a peculiar gelatinous substance obtained from French seaweed, according to *The Textile Manufacturer*, has been brought, by the experiments of the Industrial Society of Rouen, to be what bids fair to prove the best sizing for cotton cloth known. It is said to be quite indifferent, at common temperatures, to damp and mildew. The same authority affords us the information that the government of Switzerland has taken a firm stand against the use of poisonous colors; having prohibited the use of all coloring matters prepared from the compounds of the metals lead, arsenic, copper, chromium, zinc, antimony, bismuth, and mercury for the decoration of articles of consumption or of clothing, or materials entering into their composition; or of toys, covers and cushions of children's carriages, curtains and window-blinds, lamp-screens, wafers, and table services. A similar prohibition condemns the use of such poisonous organic coloring matters as gamboge, picric acid, the anilines, and especially magenta, for coloring articles of food and drink.

The Substitution of Chromic Acid for vanadic acid in the manufacture of aniline-black, which was lately affirmed in a paper read before the French Academy, and which, on account of the expensiveness of vanadic acid, would be highly desirable, has been pronounced to be impracticable by M. Witz, a technical chemist of Rouen, who affirms, on the contrary, that, to produce the desired black, vanadium is absolutely necessary, chromium giving a greenish-colored product of quite inferior character. The objection to vanadium on the score of its high price, he further points out, is practically counterbalanced by the extremely small quantity required to effect the desired reaction—one thousandth part of vanadium by weight, as compared with the weight of aniline employed, being affirmed to be in practice quite sufficient.

Engineering, Mechanics, and Miscellaneous.

The Madeira & Mamore Railway.—The latest advices indicate that the financial difficulties that have threatened the abandonment by the Messrs. Collins of their contract for the construction of the Madeira & Mamore Railroad have been practically overcome, the Brazilian government having, according to announcement, extended its credit to the enterprise to the amount of $2,000,000, a step which, in all probability, must assure the prompt completion of the work. It will be recalled by many of our engineer readers that the sum of four millions, at present held in trust by the Bank of England, and which it was supposed would be at once available to the contractors, has been withheld by legal process in the English courts up to the present time, in the interest of the bondholders, on behalf of whom it is understood to be urged that the practicability of executing the work has not been demonstrated. This unlooked-for action forced upon the American contractors the greatest embarrassments, from which, thanks to the favorable action of Brazil, they will be speedily relieved.

Railway Building in the United States is destined, in the opinion of a correspondent of *The Railway Age*, to be enormously increased during the next few years; the writer in question anticipating a vast influx of population from the East and from Europe into the growing States and territories of the Northwest. The necessity arising out of the development of the agricultural and mineral resources of these regions will, of itself, demand an increase of railway facilities there that will not be satisfied for years to come. His enthusiasm, in view of this prosperous outlook, finds expression in the prediction that the new mileage of this year will exceed that of 1878 by 2000 miles. So mote it be.

The Railroad Gazette for February 28th reports, up to that date, the construction of 86 miles of new railroad in the United States during the present year.

A Railroad across the Desert of Sahara, from Algiers to Timbuctoo, is the latest project of French engineers, who appear to be fully alive to the importance of enhancing the commercial value of the African possessions of their nation, by means of works of internal improvement that shall increase the facilities of commercial intercourse with the interior of the dark continent.

Quite a Revival in the Locomotive Building interests of Paterson, N. J., is reported. No less than twenty-eight new engines are reported by the local newspapers to have been turned out from her shops since January 1st.

The Order for the Erection of the Building for the International Exhibition to be held in the City of Mexico next year, as per our recent announcement, has been officially promulgated by the Mexican Minister of Public Works.

An Exhibition of Hydraulic Machinery, free to all nations, will be held at Verviers, Belgium, commencing March 15th.

The following Engineering Items, that we condense from the *Engineering News*, may be interesting:

The water-works now in course of construction for Rio Janeiro are said to be on a very extensive plan, and are estimated to cost $10,000,000. The contract was granted to an Englishman, and a Glasgow firm received the contract for the pipe—some 50,000 tons.—The contractors for the water-pipe and mains of the Leadville (Colo.) Water-Works, finding it difficult and inconvenient (because of a dearth of lead in the market) to obtain lead for the purpose of soldering them together, are reported to have negotiated for the purchase of a number of pigs of base bullion for their wants. "Leadville," remarks the *News*, "will then be the only city in the world that has water-works with mains spliced with silver." The greatest gas-well ever struck in Pennsylvania is reported to have been struck by the Little May Oil Co., a few days ago, at Devore's Fork.

CAUCASIAN RAILWAY.—The survey for the Russian railway in the Caucasus, between Vladikavkaz and Tiflis has been completed, and the plans are stated to have received the assent of General Possiet. The line will be 183 versts long, with a good many tunnels, and will cost 22,000,000 rubles, or about 120,000 rubles a verst, £15,000 a mile. The Caucasian range will be crossed at Kobi by a tunnel six versts long, 512 ft. below the existing post road. It is not expected that the Tiflis-Erivan line will be commenced until the Vladikavkaz railway has been completed, but the line from Baku to Tiflis, connecting the Caspian with the Black Sea, is being very energetically pushed forward.

THE BELGIAN COAL TRADE

The Belgian Minister of Public Works has just adopted a useful measure, which is received with much approval by those likely to be affected by it. The Department of Public Works now receives from the chief mining engineers, each half-year, approximate information with regard to the progress of the two important industries—coal and metallurgy—and it has been considered desirable by the minister of this department to publish this information prior to the issue of the more authoritative official returns. According to the statistics supplied by the mining engineers—the statistics being divided into two sections—there were in activity during the first half of 1878, in the first section, 84 collieries, having in operation 187 pits, of an average depth of 454 meters, and producing a total quantity of coal estimated at 5,368,983 tons. In the second section there were 77 collieries in operation, and the total production of coal was 1,889,519 tons. It will be perceived, therefore, that for the whole kingdom during this period there were 161 collieries in working, the average depth of the pits being 383 meters, and the total production of coal 7,258,501 tons. The average number of working days during the first six months of the past year was about 136, and the daily production about 333 tons. The number of workmen employed daily was 75,881 in the interior of the mines, and 21,104 on the surface, being altogether an aggregate of 97,985 workmen, whose average daily wages are stated to have been 2f. 8c. The number of iron-works, properly so-called, existing in Belgium during the first half of the past year was 55, of which 10 were inactive, and the remainder in operation. These works give daily employment to an average number of 12,717 workmen. The half-yearly production of rails and iron of all kinds is computed at 196,583 tons, of a total value of 29,378,791 fr., being 149 fr. per ton. The publication of these half-yearly returns, at the instigation of the Minister of Public Works, has been received with much satisfaction, and the Belgian press, industrial and general, has expressed approval of the measure, and likewise a hope that it will be continued. Statistics of this character are evidently appreciated in that country. According to a correspondent who writes from Brussels, and reviews more particularly the state of the coal trade during the month of January last, the situation of the Belgian coal market has not changed, and there are no new developments of any special importance to chronicle. Shipments by water have been much interfered with by the ice and other causes, and, consequently, little business in that direction has been transacted. As regards coal more especially intended for industrial purposes the demand has been very slack, and prices remain practically unchanged.

GENERAL MINING NEWS.

COLORADO.

The "Little Chief" Company, of Leadville, is erecting smelting works on property near its mine.

Flour is selling for $6.50 per sack, butter at 40 cents, fresh beef 12½ to 15 cents, and hams at 17½ cents at Ten Mile.

A mail route has been established between Leadville and Ten Mile, mail to be carried tri-weekly.

Milk is one dollar per gallon in Leadville, and the few cows in that camp are paying for themselves every two weeks.

Ten Mile is becoming crowded with people. There are at least two thousand people. Sleeping accommodations are scarce, tents and brush houses being largely used for that purpose. Notwithstanding the deep snows, prospectors are at work, and several new strikes reported.

Eddy & James's ore-sampling works are shipping nearly $7000 worth of ore per day.

According to latest advices, about 100 persons were going into Leadville daily. Fifteen dollars per week is charged for a room that will hold four persons, while $75 per month is charged for a five-room wood cottage. Restaurants are employed night and day. Strikes continue to be made, and it is thought that during the summer many more will be made.

A local exchange says: "The Buckeye Mining and Tunneling Company has purchased for $150,000 the 'King of the Valley.' The sale is made on time, with a heavy forfeiture in case of failure to meet the payments. The main shaft of the 'King' is to be sunk two hundred feet, for which purpose machinery is being now put into position."

An attachment suit has been commenced by the Leadville Mining Company, owners of the Carbonate mine, against the Little Giant mine, located immediately above and adjoining the Carbonate.

The Denver *Tribune* of March 12th says: "A net dividend was yesterday declared on the Little Pittsburg property of $125,000. The company has, during the month, paid for five engines and other machinery and the working expenses of the mine. Counting Senator Chaffee's investment at $250,000, and his share of this dividend at $62,500, he has realized just twenty-five per cent of his outlay in one month."

The Cañon *Record* notes important discoveries of gold at Gold Hill about six miles east of Cañon City. A correspondent of the Denver *Tribune*, in speaking of the rich discovery at Mosquito, says:

"The richest ore is of bluish color and shows some little metallic gold. The gold seems to be coated with the blue material. An assay from a sample of this run nearly $6800 in gold and about $3300 in silver, making some $10,100 per ton. There are also crevices containing iron and copper pyrites, zinc-blende, and a little galena. These crevices all run parallel and within a few inches of each other, as if they came from a general center.

"In Silver Lake District, near Hoosier Pass, a company has just purchased some gold mines, and a stamp-mill is to be built on the western slope of the range in the spring for treating the ore. There has been considerable ore opened up here the past fall, and the output ought to be good next season."

Another correspondent of the same paper, writing from Golden, under date of February 27th, says:

"The new smelters are fast approaching completion. The Malachite Company has commenced moving, but will not be in full operation for a few days yet.

It has leased copper-producing mines in Gilpin County, and expects to have an abundant supply of ore. The Valley Company is buying ore, and, as soon as they can get their machinery in place, will be ready to fire up. Its furnaces are complete. The French Company's works are not so forward as the others, it having been busy in getting up its extensive buildings. It will be some time yet before fires are started in these works. This company has erected, or has in process of erection, six distinct and separate buildings, two of which are over one hundred feet in length. Each of these companies expects to make additions during the summer to their already extensive works."

A correspondent of the Denver *Tribune* says:

"The Caribou mine is working with the usual good results. The Native Silver, the Monitor, and the Poor Man are also being worked to pay, the latter having just been leased to new parties. The Caribou mill is running full shifts night and day, and a mill is being prepared for the treatment of ore from the Boulder County mine, which lies about half-way between Nederland and Caribou. Very little prospecting is being done in the neighborhood of Caribou and Nederland. In fact, I may safely say that there are no prospectors in the camp."

It is reported that Governor Tabor has purchased the Red Rogers and Saxon mines in the Animas District for $55,000. These are said to be very valuable properties, both of them being silver-bearing fissure veins which run from 300 to 500 ounces. It is proposed to work the mines actively in the spring.

The Silver Cliff *Miner* says: "The King of the Valley mine has been transferred to the Buckeye Mining and Smelting Company, the price paid being $145,000. The company proposes sinking the King two hundred feet; a whim is now being put up on the mine for that purpose, and will work thirty miners. The Buckeye Company has secured some valuable mining interests in carbonates."

Prof. J. Alden Smith, Superintendent, says that the Slide mine, of the American Consolidated Gold and Silver Mining Co., produced, from February 1st to 20th, $5991.98, at an expense of less than $1600. The workings in this mine are reported to have reached a depth of 200 ft., and the vein is said to be stronger and richer than ever.

There is considerable activity at Georgetown. The Boulder Nest mine is reported to be paying well. Work at the Free America is reported as not being pushed with great activity, but is said to be paying well. Extensive operations on the White will soon be resumed. The Terrible and its connected properties are employing about 100 men and producing the usual quantity of ore.

The Pueblo *Chieftain* says: "The parties negotiating for the purchase of the Bassick mine have sent their own engineer to survey and examine the property, and, according to the strictest rules of English measurement, they find over two and a half million dollars in sight."

At the present time there is considerable excitement over the recent mineral discoveries in different localities throughout Huerfano Park, one of which, rumor says, is very rich. It is located on the head of Turkey Creek, about twelve miles from Gardner, and two to two and a half miles from here.

It is said that a recent discovery near this mine gives forty ounces of gold and fifty-six ounces of silver to the ton. The *Chieftain* says: "A private letter from a very reliable source reports a big discovery of gold a few miles down the Gunnison from Lake City, and a general stampede for the new field. The same letter reports the finding of a six-foot vein of gray copper in the Ute mine near Lake City. Great excitement prevails in that vicinity over the new finds."

THE SILVER WING MINES OF SAN JUAN.

The Burlington (Vt.) *Free Press and Times* gives the following important information concerning the above celebrated San Juan property:

"The report of the chief engineer of the Dutch East India mines, to whom was referred, by agreement of purchasers and owners, the examination of the reports of Professors Van Diest, of Holland, and Sherman, of Colorado, upon the Silver Wing mines in San Juan County, Colorado, has been made and forwarded to D. Russ Wood, of Colorado Springs, President of the company.

"The report of M. Everwyn places the net earnings that may be expected annually for the next twenty years at $736,800; after all precautionary deductions and abatements, he reduces the amount to $346,300 per annum, as minimum (which is not half the estimate of engineers who have carefully measured the ores in sight) and fixes at $1,676,700, the actual investment value of the property. An agreement of sale just made and accepted by both sides, subject to arbitration if any mistakes or over-statement has been made in any of the reports, M. Everwyn has reviewed and reported upon, the terms being the payment of $200,000 cash in advance and the balance when M. Everwyn has made a personal examination next spring. This will be the first sale of American mining property disposed of in Holland since the unfortunate Caribou sale for $3,000,000, which the Dutch purchasers lost by an alleged legal quibble, connived at by its own agent."

REPORT OF THE HERCULES & ROE SILVER MINING COMPANY.

We have received from the treasurer of this company the following report:

Work has been carried on uninterruptedly during the winter on the property of this company by an average of 25 or 30 men, all under lease. The out-turn for the quarter ending December 31st, 1878, being $8209.25, 25 per cent of which represents the royalty received by the company.

This is the product of ground above the Hercules Tunnel level, with one exception, namely, the 730 shaft, which, in the first month's work (December 14th to January 13th), produced 9¼ tons, worth $84 per ton on the average. The mineral has since greatly improved in appearance, and will probably be worth $300 to $400 per ton. In the drift, 30 feet east from the shaft, the streak of this fine ore is 6 to 8 inches wide.

The tunnel level drift is being continued east on 730, and railroad track laid as the work progresses. A small seam of mineral shows in the breast and back. Average of the last few runs, 200 to 500 ounces, with considerable concentrating rock at 80 to 100 ounces.

Four parties are stoping on this level west of Brown Gulch (known as Hercules & Roe), the runs varying from 150 to 500 ounces, with a concentrating class of 70 to 90 ounces.

The cross-cut, 500 feet west of tunnel, has temporarily been discontinued.

First level above tunnel level west is being continued and railroad track laid to breast. The stope shows several inches mineral; last run January 25th. First class, 627 oz., worth $545.49 per ton; 148 oz. 2d class, worth $97.68 per ton. The stope, worked on this level, has produced in last six months $4389.01, with an average of four men, who have laid 500 feet railroad track, drifted 75 feet, and stulled 100 feet, built sorting-house, blacksmith's shop, etc.

Second level above tunnel has had 400 feet T rail laid, and new car. Stoping is going on 350 feet in last run, February 15th. 1st class, 631 oz., worth $536.35 per ton; 2d class, 215 oz., worth $154.80 per ton.

Third or new level is being run, showing fine seam of quartz, with occasional bunches of mineral. It is about 30 feet in.

Nothing is being done on the upper levels of 730 east of gulch at the present time.

With exception of 730 shaft, none of the ground below tunnel level is being worked, and can hardly be with any advantage until an engine is placed at the Roe shaft.

The profits of working since the advent of the present management last March have been devoted to development or improvement of the working condition of the property.

H. M. GRIFFIN, Treasurer.

CALIFORNIA.

The following is from the official reports of the Bodie mines published in the *Chronicle* of February 22d: The east cross-cut from the main shaft was driven 28 ft. during the week; the south drift from this cross-cut, 10 ft.; east cross-cut on 300 level, 10 ft.; north drift from this cross-cut, 14 ft. The mine continues to look very well at all points. The south drift on the 380-ft. level of the Bulwer was driven 10 ft. The mine is yielding the usual amount of good ore. The 350-ft. level of the South Bulwer was driven 14 ft. A new ledge 8 ft. wide, of decomposed quartz and clay, has been cut on the 200-ft. level. The main shaft of the Tioga is down 50 ft. below the 420 level. The main cross-cut on this level is in 68 ft. east of the shaft. The west cross-cut on the 320-ft level is in 200 ft. from main shaft. The north drift on the 400-ft. level of the Mono is in 73 ft. The west cross-cut is in 41 ft., passing through favorable-looking quartz. There are strong hopes of finding the ledge in this cross-cut.

There has been considerable inquiry relative to the Consolidated Pacific mine during the past three weeks. The Bodie *Chronicle*, of February 22d, says:

"Winze No. 2 is being pushed for a depth of 120 feet to cross-cut to No. 1. It is down 45 feet. Work on the main has been suspended for want of timbers. On the 1st of March, timbering will commence. The shaft is down 172 feet. Work will be pushed with vigor to open the mine to take out ore this spring."

According to a correspondent of the San Francisco *Stock Report*, the Bodie Company's lease of the Syndicate mill expired March 1st, when the mill commenced crushing 1000 tons of Bulwer ore. The same company speaks very encouragingly of the prospects of the Bodie, Summit, and Tioga mines.

The following statement shows the amount of bullion produced and water used from 1870 to close of 1878 by the North Bloomfield Gravel Mining Co.:

Time.	Inches used.	Yield per inch.	Gross product.
1870-4	710,987	13·6	$96,700.00
1874-5	386,972	19·2	74,271.77
1875-6	700,000	27·5	192,735.73
1876-7	595,000	48·9	290,775.42
1877-8	796,449	39·1	311,276.70

The cost per inch of water during 1878 was a trifle over 2½c., or one third less than for previous years. A telephone wire has been built along the line of the works, and is found of great convenience.

DAKOTA.

BLACK HILLS.

Mr. Gideon Frisbee writes from Deadwood, D. T., under date of February 27th, relative to the Cheyenne mine as follows: "We have now eleven men at work on the mine, four (two shifts) in lower tunnel; two in a drift I began last Monday, in the face of the upper workings, and four (two shifts) sinking the shaft to connect with lower tunnel—the latter working by contract. The lower tunnel is being driven in the foot-wall at an acute angle with the vein, and now seems to be entering the ore. The shaft and upper drift are both in ore, and looking well. We have plenty of ore in sight to begin milling as soon as connection is made with lower tunnel."

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

Constructing Sewer, distance of about 2450 feet; City Engineer, Des Moines, Iowa	March 10, 1879
Armory; County Clerk, City of Hudson, N. Y.	" 11, "
Brick Block of Buildings, Erection of; Grinnell Burt, Warwick, Orange Co., N. Y.	" " "
Fuel, Forage, and Straw; Charles H. Tompkins, Department Quartermaster-General, St. Paul, Minn.	" " "
Light-House Towers, with dwellings and out-buildings; Wm. Smith, Department of Marine, Ottawa	" 15, "
Marking and Rating Stamps; D. M. Key, Postmaster-General, Washington, D. C.	" 18, "
Dredging at Erie Harbor, Pa.; John M. Wilson, Major of Engineers, Erie, Pa.	" 20, "
Locks and Keys for Mail-Bags; D. M. Key, Postmaster-General, Washington, D. C.	" " "
Coal for Schools of Youngstown Board of Education, Youngstown, O.	" 29, "
Books and Blanks for Board of Assessors; Commissioner of City Works, Brooklyn, N. Y.	April 9, "
Coal for Public Buildings; Western District Commissioner of City Works, Brooklyn	" " "
Coal for Public Buildings; Eastern District Commissioner of City Works, Brooklyn	" " "
Wagon Transportation; Rufus Saxton, Deputy Q.M. General, U.S.A., Fort Leavenworth, Kan	" 15, "
Railroad Grading; P. Bremond, President of the Houston, East & West Texas Railway, Houston, Tex	
Railroad Grading; 75 miles; P. Bremond, President of the Houston, East & West Texas Railway, Houston, Tex	
Foreign Contract.—To lay and work up a submarine cable, between Luzon (Philippine Islands) and the coast of China; Ministerio de Ultramar, Madrid, Spain	

Contracts Awarded for Philadelphia City Water Department.—Contracts were awarded as follows: Philadelphia and Reading Coal and Iron Co., supplying 4000 tons (of 2240 pounds each) broken coal to the Schuylkill works, $3.13 per ton; 5000 tons do. to Roxborough works, $3.10 per ton. Nathan H. Jarman, 1800 tons do. to Frankford works, $3.14 per ton; 200 tons do. to Fairmount works, $3.14 per ton; 500 tons egg coal to Chestnut Hill works, $3.14. W. H. Ingham and T. J. York, Jr., 10,000 tons broken coal to Belmont works, $2.70 per ton; 3500 tons do. to Delaware works, $3.02 per ton.

125,000 pounds of American refined lead, not smelted, Ferguson Bros., $4.35 per one hundred pounds.

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending February 11th, 1879:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
212,094	Manufacture of Hydraulic Cement	John A. Francis	New York, N. Y.
212,107	Testing-Machine	Titus Olsen	Philadelphia, Pa.
212,109	Pump for Oil-Well	James M. Pearce	Parker City, Pa.
212,117	Feed-Water Heater	W. H. D. Sweet	Albany, N. Y.
212,139	Machine for Pulverizing and Amalgamating Ores	E. Y. Harrison	Avoca, Victoria.
212,140	Rotary Engine	John Henderson, Jr.	Waterbury, Conn.
212,144	Acoustic Telegraph	John H. Irwin	Philadelphia, Pa.
212,145	" "	" " "	" "
212,150	Artificial Fuel	F. F. E. Muck	Bochum, Germ'ny.
212,156	Steam-Boiler Furnace	John Seiberling	Akron, Ohio.
212,165	Rotary Engine	Geo. C. Tarborough	Baldwin Co., Ala.
212,169	Steam Condensing and Feed-Water Heating Apparatus	B. F. Babbitt	New York, N. Y.
212,180	Relief Piston for Pump	M. B. Brannen (a)	Shenandoah, Pa.
212,182	Stone-Dressing Machine	John D. Brunton	Battersea, Engl'd.
212,183	Electric Light Regulator	Charles F. Brush	Cleveland, O.
212,189	Quicksilver Furnace and Condenser	Benjamin F. Chase (b).	Jan Jose, Cal.
212,252	Pump	Rocco Misso	Macon, Miss.
212,267	Steam-Vacuum Pump	Charles Rogers	Allegheny City, Pa.

(a) Assignor to himself and John S. Williams, same place.
(b) Assignor of half his right to Moses Davis, same place.

THE COAL TRADE REVIEW.

NEW YORK, Friday Evening, March 7, 1879.

Anthracite.

The past week has been a quiet one in the coal trade, and prices have shown some weakness. There is a feeling that prices may go lower at the auction sale next week, but there is but little inclination to sell ahead at prevailing rates.

During the week, there has been another rumor that an understanding was about to be arrived at by the several coal companies; but like all previous rumors this year, it appears to have its origin among the frequenters of Wall street.

The Pennsylvania Railroad Company has joined the ranks of the companies that acknowledge that they derived no benefit from last year's coal combination. The Lehigh Valley, the New Jersey Central, the Philadelphia & Reading, the Pennsylvania Railroad, and the Delaware, Lackawanna & Western Company have each admitted that the combination was a bad thing, and was injurious to the interests of their stockholders. There now remain but the Delaware & Hudson Canal Company and the Pennsylvania Coal Company which have not admitted the correctness of the ground taken and the policy advocated by the ENGINEERING AND MINING JOURNAL. Is it not a shame that the entire business of the country should have been taxed during four years, and their own stockholders injured, in order that managers might experiment with a problem that had long ago, and many times, been solved in the same expensive manner adopted by them?

The Delaware & Hudson Canal Company announces that it will sell at public auction on the 12th inst., 50,000 tons of coal, as follows: Steamer, 5000 tons; grate, 12,000 tons; egg, 15,000 tons, and stove, 18,000 tons; delivery to be made at Weehawken.

The Philadelphia & Reading Railroad Company carried the following quantities of coal in the first three months of the fiscal years 1878 and 1879:

	1879.	1878.	Increase.	Decrease.
December	373,169	647,727	.....	274,557
January	451,697	231,323	220,374	.....
February	520,500	173,462	347,037	.....
Total	1,345,367	1,052,512	567,411	274,557

The month of December, 1878, showed a large falling off as compared with the same month in 1877, caused by the combination being in force in 1878, and not in 1877. In January and February of this year, under free competition, the shipments were more than double those of the same months last year.

Efforts are apparently being made to force all the companies into a combination. Such an organization has been in the past a disadvantage to the companies, and would be again this year. The mere fact of the non-existence of a combination will greatly encourage the consumption of anthracite coal, even though there were no difference in prices. Under open competition, manufacturers expect reasonable prices for coal, and do not hesitate to take the ordinary business chances; but under combination, they know not at what time the price will be arbitrarily advanced to an unreasonable basis. Such being the case, there would naturally be every effort made to avoid dependence on anthracite coal as a fuel, and Cumberland, Clearfield, Blossburg, and the Western coals would secure markets that they could not hold in open competition in the anthracite trade.

For several years past, it has been customary to talk of a productive capacity of 30,000,000 tons of anthracite coal per annum. Under the first combination and during the time the companies had an unlimited borrowing capacity, the mines were probably developed to that extent, and there was a sufficient supply of labor in the mining regions to produce this quantity. Since then, however, every effort has been made to curtail expenses and to make as good showings as possible in the annual statements, and the result is that there is not nearly so much dead-work done; breakers have decayed, new mines have not been opened, and upon the whole the capacity of the mines has been very much reduced. In addition to this, the reduction in wages, coupled with the lack of employment, has driven to other occupations a large number of the miners, till it is questionable whether more than 24,000,000 tons of coal could be produced by working full time during the whole year, after allowing for accidents of various kinds, strikes, etc., that interrupt production.

It is customary to base calculations of the ability of the companies to produce upon the most favorable months of the year, when the days are long, there are no delays from ice or snow, when the mines are in the best condition to produce, and the full force is employed in mining and preparing coal. The coal trade differs from almost all others, in the fact that coal is produced and consumed in such large quantities that it is impossible to store any large proportion of the year's production or requirements. It is an easy thing to store a year's product of a blast-furnace, cotton mill, lead or silver mine; but a month's product of anthracite coal would more than fill all available places for its storage, in addition to adding greatly to the expense of handling it. Furthermore, owing to the inability of consumers and dealers to furnish storage for their supplies, and in many cases owing to the impossibility of shipping the coal at reasonable rates of freight, nearly all of the business has to be done during about eight months of the year.

Buyers are following the rule of avoiding as much as possible purchasing on a declining market. This, with the efforts of one or two of the coal companies to make the situation appear as dark as possible, is curtailing the business, and will throw it over into the summer months. Owing to the very complete exhaustion of stocks of domestic coal, brought about by the severe winter, the prospects of a good demand from manufacturers, an improved iron trade, and the increased facilities for extending the Western business; it is probable that the demand for anthracite coal will be as great, if not greater, this year than ever before in the history of the country. Should this be so, it is probable that natural causes will so restrict production that during some portion of the year the demand will be larger than the supply, in which event those companies that are actually prepared to do a large business will be much better off without than with a combination, and improvident consumers will have to pay a higher price for their fuel.

Prices may go down lower than they are before the opening of navigation, but they must react whether there is a combination or not; and when they do, there will be a rush for coal, and probably more activity than the trade has witnessed since the latter part of 1876, after the combination was dissolved. Those who are in a position to purchase and take coal now, will do well not to delay much longer in the expectation of lower prices, nor even in the hope that present rates will be obtainable.

The Philadelphia & Reading Railroad Company has issued the following circular:

"Until further notice, anthracite coal shipped through the Chesapeake & Delaware Canal will be entitled to the same drawbacks as if shipped through the Capes of the Delaware."

The production of anthracite coal last week was 393,063 tons, as against 361,486 tons the previous week and 211,975 tons the corresponding week of 1878. The total production from January 1st to March 1st was 2,956,412 tons, as compared with 2,026,446 tons for the like period of last year, showing an increase this year of 929,966 tons.

Bituminous.

We learn of no important contracts for this class of coal, although there is a fair incidental business doing as compared with last year. Both the Clearfield and the Cumberland region show a larger tonnage this year than at the corresponding time in 1878. It is very evident that these regions are going to carry on a very heavy competition against each other, while the operators of each district will probably conduct a ruinous competition among themselves. Already it is said that the Clearfield operators are selling coal at the mines for delivery along the line at prices that do not net over 60 to 65c. per ton. The Chesapeake & Ohio Canal offers a slight concession in its charges. The Baltimore & Ohio RR. has not shown what it will do, but nothing is expected from it. It is said that the Pennsylvania RR. Co. will treat its shippers liberally, and it is thought that the Clearfield Region will be in a position to do a very good business and practically to control the New York market for bituminous coal. Owing to the more liberal policy of the Pennsylvania Railroad, industries have been established along the line of its road that will consume a large quantity of Clearfield coal this year; but, owing to the opposite policy on the part of the Baltimore & Ohio Railroad, the Cumberland Region will be dependent entirely upon the competitive markets. Even in Baltimore this coal will be met by cheap anthracite and Clearfield coals, while there will be still closer competition for it in New York, and in the Eastern markets except for special purposes. Of course there will be a considerable demand for Cumberland coal this year, and perhaps as much will be taken as during 1878; but, to secure that amount of business, very low and unprofitable prices are likely to result. The Cumberland companies will probably see that if their business is to prove a success they will have to adopt the economies to be derived from the long-talked-of new railroad and the improved systems of transportation on the canal and a considerable reduction in the rates of wages at the mines.

PHILADELPHIA, March 6, 1879.

The local trade is but moderately active, and at the shipping point the condition of the river and the high freights operate against large shipments. Dealers who can be reached by rail have a moderate supply, while those who depend on water carriage have little or no coal on hand. The demand in the West is reported active. The stocks accumulated at the shipping point, which is held to buyers as a threat, will disappear like snow in the midday sun, when freights settle down. Rates to Boston range from $1.80 to $1.90. Vessels are scarce, and most of the orders received are limited to $1.75.

Never—or, rather, hardly ever—has the trade presented such a state of things as a bare market and prices steadily declining. All the elements constituting a good trade are there. Coal is wanted in all directions. Manufacturers of all kinds are preparing for a larger business; the cold

weather has caused most of the coal on hand to be consumed; the productive capacity of the anthracite region is daily better understood, and is known to be far below the total sum of what each district claims that it can produce, and prices keep declining. The present prices on board, which have to be divided between the producer and transporter, would not make it a profitable business to either of them. Nearly forty millions of tons of anthracite, representing over seventy-five millions of tons in the ground, have been marketed in the last two years without one cent of profit. The best coal and the most available is thus taken out, and the property yearly depreciated to a large extent without any return when the coal is mined by the owners of the land. If nothing was made at the prices obtained last year, what must be the consequences this year of tide-water rates already fully $1 per ton less and still declining? There is no good reason for the present low rates. It results from the efforts of some of the corporation managers to demoralize the market in order to force the others to come to their terms and form another combination. Every combination so far made has ended disastrously, and so will any new one entered into. All that is needed now is the knowledge that coal will not be produced in excess of the wants of purchasers. Experience has proved that quotas will not work, and, as to agreements about prices, they are merely weapons in the hands of the dishonest to strike at the honest ones. The auction sales are, at the best, nothing but mock auctions, intended to bear or bull the market, manipulated to accomplish a certain purpose by which any *bonâ fide* purchaser is victimized. They do no credit to those who use such means to regulate the disposition of their coal.

Let alone, the trade would take care of itself, and it is much to be regretted that such an important industry should intentionally be thrown into such confusion, when there is no good cause for it.

Our Baltimore correspondent, under date of the 4th inst., says: "The prices given (elsewhere) are those paid by the trade here, there being no shipments of anthracite coal hence. These are the combination prices arranged in Philadelphia on the 27th ult., by the representatives of the Susquehanna Coal Co., the Summit Branch RR. Co., the Mineral RR. & Mining Co., and the Philadelphia & Reading Coal and Iron Co. They are the lowest known in Baltimore in the history of the trade, the prices during the depressed seasons of 1857–8 not excepted. With the exception of a few thousand tons held by one dealer, the market is bare, and the decline will not entail loss on the retail trade. We expect to give consumers the benefit of the present prices, and also to substitute anthracite for bituminous coal wherever practicable. The Baltimore & Ohio RR. Co. is yet to be heard from. Whether it will follow with a reduction in freight to meet the situation, we have no means of knowing. The shippers of bituminous (George's Creek) here think the present figures, $2.80 @$3, f. o. b. at Locust Point, is bottom for them. They are blue in anticipation of the prospects for business in the early future, while the uncertainty of freights for Eastern ports, and the apparent necessity of making contracts at fixed rates delivered, does not throw a halo of sunshine on their pathway.

"Navigation by the Chesapeake & Delaware Canal for coal barges is not yet resumed, but it is hoped that the first boats for the season will arrive from Port Richmond, and cargoes of bituminous coal will begin to move from here in the next day or two.

"Although prices for anthracite afloat are very low, we are told that 'hard pan' may not have been reached; for freights from Port Richmond are twenty cents above last year's average rates. Should lower figures prevail when the Delaware River and the Chesapeake and Delaware Canal are clear of ice, we shall have still lower prices, which will cause a corresponding weakening in rail freights on the Pennsylvania and the Northern Central Railroads.

"The Philadelphia & Reading Coal and Iron Company is now quoting in cars here, per Reading & Wilmington, and Philadelphia, Wilmington & Baltimore Railroads, to compete with the coals of the Pennsylvania Railroad.

"Taking it altogether, the situation is interesting, and trade will be any thing but dull the coming season."

The outlook for a good Western and Canadian trade is very encouraging. Messrs. Lee & Loomis, of Buffalo, under date of March 3d, say:

"Coke has advanced 25c. per ton, owing to an increased demand at the mines. The general trade has improved, and prices for the present are firm. The retail demand for anthracite coal has been larger than last year, owing to the extremely cold weather, and prices are fairly maintained, and no change is anticipated until the opening of canal navigation, when a reduction must be made to meet the prices ruling in the New York market, with canal freight added. The business outlook is brighter than last year, and a large tonnage is anticipated."

Mr. E. L. Hedstrom, of Buffalo, under date of March 3d, says:

"There is as usual at this season of the year a reign of quiet and peace among coal dealers. The demand, while brisk for chestnut coal, is light for other sizes. Prices for nut are very firm at our quotations, and no one asks any thing off from the market price. In fact, even now, though it is late in the season, the demand is ahead of the supply. Were it not for the fact that Canadian dealers have reduced their stocks very low, and that the majority are entirely out of some sizes, and with scarcely an exception all are running from hand to mouth on chestnut, we might look for a very unpleasant as well as unprofitable condition of the coal trade.

"For certain through points there has been a shading of circular prices on some sizes, more particularly on stove, the production of which is in excess of demand at present, on account, we believe, of the great difference—fifty cents per ton—which has been maintained between stove and nut.

"Our local market is firm and steady, and no disposition has been manifested yet to break the market. The above is, perhaps, all that can be said that will be faithful to the condition of things."

C. M. Underhill, Esq., General Salesman of the Anthracite Coal Association, writing from Buffalo, under date of March 3d, says:

"Stocks here and in the West are very light. May 1st will see every coal-yard here and West cleared out and bare of coal. The demand has been good all winter, and still is good at our quotations."

Messrs. Reno & Little, of Chicago, write us, under date of March 4th, as follows:

"The receipts by rail of anthracite coal are larger at this time than ever before, and the prices are irregular and weak. The quantity of coal yet remaining upon the docks is liberal for this season of the year.

"The supply of bituminous coal upon the docks and by rail is larger than is needed for the market, and consequently prices are not firm. The demand for both steam and house use is light. The two steel-rail mills and the blast-furnaces here are full of work."

The following are the arrivals of Pittsburg coal at Louisville, during February, 1879: 22 boats and 36 barges; Ohio River coal: 2 barges. Shipments: Pittsburg coal, 20 boats, 11 barges.

On hand, March 1st: 16 boats and 4 barges Pittsburg coal in first hands, and 32 barges and about 95,000 bushels in city dealers' hands.

Messrs. Byrne & Speed, of Louisville, Ky., under date of the 3d inst., say:

"The coal business this winter has been very good; the prospect for March is rather better than usual.

"Many of the coal houses that were well filled last season are now empty; this gives us an early spring trade.

"The quantity of coal afloat is small; some coal was sold last week at 7½c., and the tendency is for higher prices."

NEW ORLEANS, March 1, 1879.

The coal market continues without any change in quotations, although a better feeling prevails for advanced prices, and there is not such a strong disposition to sell at ruling rates. This is in consequence of the strikes of the miners at Pittsburg, and the probably light production of coal the coming season. The stock on hand is somewhat lighter than at same time last year.

Respectfully, C. A. MILTENBERGER & Co.

Coal on hand, March 1st, 1879: 136 boats and 5 barges Pittsburg coal. Consumption during February: 27 boats and 5 barges Pittsburg coal. Arrivals during February: 20 boats and 4 barges Pittsburg coal.

The San Francisco *Commercial Herald* of February 27th says of coal:

"Imports from January 1st to February 1st: Anthracite, 595 tons; Coos Bay, 3310 tons; Vancouver Island, 10,828 tons; Seattle, 9825 tons. The market is slack for all kinds, and prices in buyer's favor. Supplies from the North continue free. The City of Chester brought 500 tons Nanaimo. The El Dorado from Seattle brought 1750 tons; Modoc, 620 tons; Henry Buck, 1000 tons; the Twilight, from Coos Bay, 225 tons, and Big River, 240 tons, same. The Wellington is taking fast hold of the household trade of the city. The price of this is $9, and Seattle, $8, for screened. We see that dealers offer to sell Coos Bay, delivered to families in any part of the city, at $7.50. This is queer, when we consider that the cargo price of same to dealers is $7 from ship's side. Buyers of this would do well to examine the weight and quality of same. California Mount Diabolo Steam sells from boat at $4.50@$5.50 for fine screenings and coarse, respectively. It is generally claimed by dealers that the cost of drayage and delivering to families is not less than $2@$3 per ton; hence Wellington, West Hartley, and Scotch Splint sell to families delivered at $12@$13, short ton, all other kinds in proportion. There is no Australian here, and, so far as we know, very few cargoes now afloat *en route*, quotable at $7. Anthracite and Cumberland are both in liberal stock, with a restricted demand; prices both low and nominal. The Hecla, from Wellington, brought 1350 tons, and the Ida S., from Coos Bay, 335 tons. The P. J. Carleton, from Nanaimo, brought 1880 tons. Schooner Emma, 330 tons, Coos Bay; Premier, 415 tons, same."

IRON MARKET REVIEW.

NEW YORK, Friday Evening, March 7, 1879.

American Pig.—The Thomas Iron Company quotes sales of 1000 tons of Nos. 1 and 2 Foundry iron at $18 and $16.50, respectively. Two thousand tons of No. 2 iron have been sold to go to the Mississippi River The low freights offering by returning grain cars, that would otherwise go back empty, is greatly extending the market for anthracite iron. There has been some business done in a small way outside of the above-noted transactions; but, upon the whole, the market may be pronounced quiet. Buyers are disinclined to purchase at present prices, and are withholding orders as much as possible; but it looks as though a good market must soon spring up. There is said to be a very good demand for water-pipes. There is also a good inquiry for forge iron. This results, probably, from the advanced prices of old rails and scrap iron. Good No. 1 Foundry is not very abundant. Stocks with consumers are at the lowest point, while they are not large with makers. We quote No. 1 Foundry at $17.50 to $18; No. 2 Foundry, $16.50; and Forge, $14.50 to $16.

Scotch Pig.—There is but very little business doing in this article. We quote: Eglinton, $20; Glengarnock, $20.50@$21; Coltness, $22.

Rails.—Sales of between 5000 and 6000 tons of steel rails have been made since our last, and there are negotiations pending for from 20,000 to 30,000 tons more. As the mills are constantly adding to their already large list of orders, prices are naturally very stiff. We quote at $42@$44 at mill. Iron rails are quiet, and quoted at $36@$37 here.

Messrs. John E. Swan & Brothers, of Glasgow, under date of February 21st, report 88 furnaces in blast, against 87 a year previous. The quantity of iron in Connal & Co.'s stores was 213,308 tons, an increase of 2960 tons

for the week. The shipments for the week ending February 15th showed an increase of 1500 tons, and the total shipments, from December 25th an increase of 5470 tons as compared with shipments to same date in 1878. The imports of Middlesbrough pig-iron for the week ending February 15th showed an increase of 420 tons over the corresponding week of last year, while the total shipments from December 25th showed a falling off of 5947 tons, as compared with shipments to February 15th, 1878. No. 1 brands of Scotch iron were quoted as follows: Coltness, 50s.; Langloan, 50s.; Gartsherrie, 47s.; Summerlee, 46s.; Carnbroe, 44s.; Glengarnock, 46s., and Eglinton, 42s. 6d. Middlesbrough iron, f. o. b., Tees, was quoted as follows: No. 1 Foundry, 37s.: No. 2, 35s. 6d.; No. 3, 33s. 6d.; No. 4, 33s. Bessemer iron. f. o. b., Barrow, was quoted as follows: No. 1, 55s.; No. 2, 52s. 6d.; No. 3, 51s.

Old Rails.—We learn of no business, and quote nominally at $20@$21.

Wrought Scrap.—A sale of 500 tons on private terms is reported. It is almost impossible to arrive at a quotation. Some are asking $24@$24.50, while the best bid is only $21.50. Wrought scrap is very scarce and likely to rule low for some time.

Messrs. Justice Cox, Jr., & Co., of Philadelphia, under date of March 6th, say:

PIG-IRON.—The market for pig continues to improve. The one or two companies disposed to sell at prices ruling last month have advanced their prices full a dollar per ton; hence prices may be quoted firm, at $18 to $19 for No. 1; $16.50 to $18 for No. 2; and $16 to $17 for Gray Forge.

MANUFACTURED IRON.—The bar mills continue to have about all they can do, at present prices, with large offerings for future delivery, which they stoutly refuse. The plate mills are not so firm in prices, but all have a fair amount of business. We quote: Bars firm, at 1 7-10 to 2c. per lb.; plate and tank, 2⅛ to 6c. per lb.; skelp, 1 9-10 to 2c. per lb.

RAILS.—Steel rails continue in demand, the mills having all the orders they can handle for some time to come. We quote $42 to $44 at mills. Iron rails are in good demand, most mills running fuller than for some years. We quote $34 to $36 at mills.

OLD RAILS.—The demand for old rails is very brisk, at figures quoted last month, but buyers are firm at the advance. Some sales are reported. We quote $20.50 to $22, Philadelphia.

MUCK BARS.—The demand for muck bars continues good, and sales of 2000 bars are reported, at full quoted prices. We quote, $30.50 to $33, Philadelphia.

SCRAP.—Wrought scrap is in demand, but coming into market more freely now navigation is opening. We quote: $20 to $22; Cast, $12 to $16.

OLD WHEELS are quoted $17.50 to $18.50, Philadelphia.

Messrs. Palen & Burns, of Buffalo, under date of March 5th, write of the iron trade of that city as follows:

"Business here has been quite dull since the commencement of the new year; but owing to the sudden recent advance in price of the Eastern and Western furnaces, the business has taken a little spurt, and we have to report several good sales during the past week. The price of Connellsville coke has also advanced 25c. per ton here, which it is believed has been brought about by an increase in the consumption of iron. Eastern furnaces are quoting as follows, for immediate delivery, 4 months' terms: No. 1. Foundry, $17.75@$19.50; B1, $16.75@$19.00; No. 2, $15.75@$18.00; with the Western furnaces a little above their prices. Softeners from the Hocking and Hanging Rock regions have also advanced in price. The general impression here among foundrymen is, that there will be a good demand during spring and summer."

The following, dated March 5th, 1879, is from Columbus, Ohio:

"There is no particular change to note in the condition of the market since our last report. There is a general fee'ing among producers that they are going to secure better prices for pig-iron. Consumers, on the other hand, are buying mostly for immediate use, thinking the advance is only a temporary flurry. The advance in lake ore and coke must necessarily help to stimulate the price of iron. Good foundry irons are quite scarce. Prices are unchanged."

Our Louisville (Ky.) correspondent notes a firm market, with moderate demand and an advance in some grades of hot-blast iron.

The following, dated March 3d, is from our Milwaukee (Wis.) correspondent.

"The pig-iron market has been quiet during the winter, with sales in small lots at the quotations below, consumers caring but little about placing orders. In this part of the West the principal iron used is charcoal Lake Superior, of which the stocks are small, and none being pushed upon the market. We do not hear of any of the idle furnaces in the Lake Superior region going into blast this year, but do look for a slight improvement in prices for what iron may be made from Lake Superior ores.

"There is a decidedly growing feeling springing up, both by the furnace men and consumers, for an advance in prices, which can be sustained. We may say that there is some disposition on the part of consumers to buy more freely as the spring season draws nearer."

COAL AND IRON NOTES.

ALABAMA.

Things are going on very smoothly at the Jefferson mines. Work is regular, and prospects seem very bright for the future. The Warrior mines are being regularly worked.

IOWA.

The coal works at Muchachinock are overcrowded, and many men with families are being discharged.

In consequence of the moderating weather, the output of coal at Beacon has fallen off very considerably.

Work in the coal mines at Des Moines is very slim at present. Thirty or forty men were drawn out of Redhead's shaft two weeks ago.

The coal mines at Excelsior are running at about half-time.

KANSAS.

It is stated that there is a bill before the Legislature of Kansas providing for the sinking of a shaft at the penitentiary by the convicts, and have it worked by convict labor exclusively.

The coal shaft at Leavenworth has been running steadily for the last five months, only losing two days on account of the snow-storm; but it is getting slack now.

LAKE SUPERIOR.

THE IRON ORES OF THE MENOMINEE RANGE.—The *Mining Journal* of the 1st inst. says: "The royalty values of the ores of the Menominee iron range appear to be but little understood among the owners of property in that vicinity. We are informed that the Lake Superior Ship Canal Railway and Iron Company has leased many of the lands owned by that company on that part of the range now accessible by rail, at a royalty of 60 cents per ton for the first 10,000 tons mined each year, and 50 cents per ton for all ore mined in excess of that amount. It has also given short options, based upon the same terms, upon very nearly all the remaining lands in the vicinity of the railroad, which are supposed to be crossed by the ore-bearing formation. We are not acquainted with the terms of any other recent leases on this range; but as the Canal Company owns nearly one half of the lands supposed to be crossed by the ore formation, it is probable that, if they lease for these prices, others will hold at the same figures, where the properties are equally desirable."

The same authority has the following:

"The iron-ore trade is looking up. Prominent iron men claim that the demand for Bessemer ores will be largely in excess of the supply the coming season, and, as a consequence, prices must advance. At its annual meeting the Republic Iron Company resolved to advance the price of Republic fifty cents a ton, and gave notice to consumers that the right to advance the price on any part of their estimated product which may remain unsold on the first of May would be reserved.

"At the Bessemer mine, some ore is being raised from a depth of 100 feet, but not enough to overstock even a light market next season. There appears, however, to be a good body of ore of good quality in the bottom, and the deposit is being stripped to the west a considerable distance preparatory to more extended operations whenever such a course shall be deemed advisable. The company's lease has lately been declared forfeited for non-payment of royalty, and it is not improbable that a complete change of ownership will result in consequence."

OHIO.

The Patterson Coal Company, of New Straitsville, has a lease of forty acres of coal land. The coal vein averages about nine feet; but after the slate, bone, and inferior coals are separated, and the trimmers outside get their share, there is very little more than six feet. There are about 50 men employed, and the output of late has been about 500 tons weekly. The other mines here are running about half-time, the Central about three fourths.

The miners at the Ohio & Pennsylvania Coal Company's Averick shaft, at Steubenville, who were receiving 2 cents a bushel for clean coal, squared up their places on February 10th, with the understanding that they were to receive a higher price for their labor, but finally agreed, without any stop, to take 56 cents per ton. The cars, ordinarily filled, will yield from six to seven bushels, or 500 to 600 pounds per car. The boss at the Swift shaft is paying 60 cents per ton, and increasing his force, shipping his coal by the river to Cincinnati.

Kincaid, Mitchell & Company can load and ship eighty cars per day from their colliery at Straitsville. They employ from 120 to 200 colliers.

W. B. Brooks & Son, whose colliery is in the vicinity of Nelsonville, employ from 200 to 250 colliers.

The Laurel Hill Coal Company mines, at Little Run, Athens County, are mining twenty car-loads per day.

The Guide Mill Rollers of Cincinnati are on a strike against a recent reduction of 28½ per cent in their wages.

PENNSYLVANIA.

The coal-miners of the Monongahela are now mining coal for 2½ cents a bushel.

WILKES-BARRE, PA., March 5.—The Susquehanna Coal Company has notified its employés of a 10 per cent reduction in wages, dating from March 1st. The reduction does not apply to contract work.

We are indebted for the following notes to recent issues of the *National Labor Tribune*:

The average number of men employed in each bituminous mine of the first district of this State is 77. The average amount of coal mined by each miner per year is 560 tons.

The average wages of a miner in the bituminous coal-fields of Pennsylvania, according to the official report, is $235.20 per year. Thirty-two persons sacrificed their lives in getting out the coal.

The number of days averaged by our home miners in 1878 was 175.

There are 15,190 bituminous coal-mines in the district in Pennsylvania, over which William Wilcox presides as inspector. There are 2821 day-hands employed in and around the mines of the same district, or a total estimated at 18,011 men.

There are 244 mines employing more than ten men in the first bituminous coal district of Pennsylvania. But 217 of these were operated in 1878.

An extension of the Sharon coal-field has recently been discovered in the northeast corner of Lawrence County. The vein, which is eight feet thick, lies 137 feet below the surface, and it is supposed to underlie all that section between the point of discovery and the open mines in Mercer County, a distance of six miles.

The Prospect Coal Company has made a new acquisition in the shape of the Luthill mines, near Cannelton, Beaver Co., Pa., and proposes to begin operations at once. The tract purchased contains a deposit of cannel coal. There is also an excellent field of bituminous coal. It will work both veins.

The production at the Buhl, Westerman & Co.'s home banks, near Sharon, Pa., is over 200 tons of coal per day.

The act to establish the iron and industrial school of Eastern and Western Pennsylvania has passed the Pennsylvania State Senate.

CONNELLSVILLE COKE.—We are indebted to the *American Manufacturer* for the following:

"The growing consumption of this superior fuel has raised its manufacture to one of the leading industries of the country. We find, on late

inquiry, that the demand is fully up to 30,000 tons per week, which is at the rate of 1,560,000 tons a year. In order to show how wide-spread are the consumers, we have obtained from Messrs. Frick & Co., large dealers, a list of the principal furnaces where it is used, which is printed below. The more numerous foundries and other places of its smaller consumption are omitted:

Etna Iron Co., New Castle, Pa.
Stewart Iron Co., Sharon, Pa.
Westerman Iron Co., Sharon, Pa.
Mt. Hickory Iron Co., Sharpsville, Pa.
Spearman Iron Co., Sharpsville, Pa.
Girard Iron Co., Girard, Ohio.
Brier Hill Iron Co., Brier Hill, Ohio.
Himrod Furnace Co., Youngstown, Ohio.
Andrews Bros., Hazleton, Pa
Andrews & Hitchcock, Hubbard, Ohio.
Grafton Iron Co., Leetonia, Ohio.
Cleveland Rolling Mill Co., Newburg, Ohio.
North Chicago Rolling Mill, Chicago, Ill.
Union Rolling Mill, Chicago, Ill.
Joliet Iron and Steel Co., Joliet, Ill.
Milwaukee Iron Co., Milwaukee, Wis.
Missouri Furnace Co., St. Louis, Mo.
South St. Louis Iron Co., St. Louis, Mo.
Ohio Iron Co., Zanesville, Ohio.
Riverside Iron Works, Wheeling, West Va.
Wheeling I. and Nail Co., Wheeling, West Va.
Bellaire Nail Works, Bellaire, Ohio.
Benwood Iron Works, Martin's Ferry, Ohio.
Shoenberger, Blair & Co., Pittsburg, Pa.
Lucy Furnace Co., Pittsburg, Pa.
Isabella Furnace Co., Pittsburg, Pa.
Moorhead & Co., Pittsburg, Pa.
Laughlin & Co., Pittsburg, Pa.
Graff, Bennett & Co., Pittsburg, Pa.
Edgar Thomson Steel Co., Pittsburg, Pa.
Cambria Iron Co., Johnstown, Pa.
S. C. Baker, Altoona, Pa.
Holl & Gap Iron Co., McKee, Pa.
Glamorgan Iron Co., Lewistown, Pa.
McCormick & Co., Harrisburg, Pa.
J. & J. Wister, Harrisburg, Pa.
Penna. Steel Co., Harrisburg, Pa.
C. B. Grubb & Son, Columbia, Pa.
Marshall Furnace, Newport, Pa.
Chickies Iron Co., Chickies, Pa.
Coleman Furnaces, Cornwall and Lebanon, Pa.
Crane Iron Co., Catasauqua, Pa.
Crown Point Iron Co., Crown Point, N. Y.
Cedar Point Iron Co., Port Henry, N. Y.
Onondaga Iron Co., Geddes, N. Y.
Falkill Iron Co., Poughkeepsie, N. Y.
Hudson Iron Co., Hudson, N. Y.
Greenwood Iron Works, Greenwood Iron Works, N. J.
Ashland Iron Co., Ashland, Md.
H. Campbell & Sons, Ironton, Ohio.
Belfont Iron Works, Ironton, Ohio.
Norton Iron Works, Ashland, Ky.
Dennis Long, Louisville, Ky.
Swift Iron and Steel Works, Cincinnati, O.
Jos. Dysart & Son, Altoona, Pa.
Omaha Smelting & Refin'g Co., Omaha, Neb.
Germania Smelting & Refining Co., Salt Lake City, Utah.
Penna. Lead Co., Salt Lake City, Utah.

"The above furnaces all use Connellsville coke in whole or in part. Jos. Dysart & Son, of Altoona, are now selling about three cars per day, which they break up, and are introducing it successfully in place of anthracite coal for domestic purposes. There are fully one thousand foundries in all parts of the country now using it in preference to any other fuel. It is also being used by acid works for filtering sulphuric acid. The daily production is nearly 400 cars, of 13 tons each, or about 5000 tons, and the demand is fully up to the production."

WEST VIRGINIA.

The President of the Coalburg Coal Mines has perfected arrangements with the Chesapeake & Ohio Railroad to have his coal brought to the Ohio River from the mines as in former years, where it will be loaded in barges at Huntington and towed down by the Robert Peebles. At Huntington the railroad company has every facility for loading the coal into barges from the cars.

The Brewer Smith Coal Works, near Clifton, have been started on the coöperative plan. An understanding has been reached between Mr. Smith and his miners for an equitable division of profits and expenses, and business will progress quite satisfactorily hereafter.

THE IRON ORES OF NEW RIVER, WEST VIRGINIA.—The analysis of these ores, made by Henry G. Debrunner, F.C.S., Chemist for Park & Co., of Pittsburg, have been made public through the columns of the *American Manufacturer*. "In regard to the New River ore deposits alluded to in President G. P. Hays's letter of your last issue, I would like to state that a sample of said ore analyzed by me some months ago, showed the following composition:

Moisture	0·223	per cent.
Siliceous matter	6·142	"
Ferric oxide	93·549	"
Phosph. acid	0·030	"
Loss	0·056	"
	100·000	
Metallic iron	65·484	"
Phosphorus	0·013	"

It equals our best Lake Superior iron ores, Republic and Jackson, in regard to its percentage of metallic iron, and even surpasses them in quality by containing far less *phosphorus* than any of the brands above mentioned.

MISCELLANEOUS.

EXPLOSION IN AN ENGLISH COAL MINE.—LONDON, March 5.—An explosion has occurred in the Deep Drop coal-pit, near Wakefield, by which nineteen persons were killed.

GERMAN DUTY ON ENGLISH COAL.—A special telegram from Berlin, dated March 3d, 1879, intimates that Prince Bismarck's protectionist tariff will include, it is now stated, a duty upon English coal. The German coal-owners have long clamored for such a measure, which is to secure them the sole command of the home market; and it is said that their agitation has met with success in high quarters. The government will, it is reported, propose a duty of 10 per cent.

Twelve thousand tons of coal have been dispatched by rail from the Drummond (N. S.) colliery this year.

IRON FOUNDRY BURNED.—The iron foundry of Howell, Saxton & Co., Brooklyn, N. Y., was burned on the evening of March 5th. The loss is estimated at $100,000; insurance, $20,000. James Howell, the Mayor of Brooklyn, is the principal member of the firm.

The collection of California minerals displayed at the Paris Exhibition has been presented to the National School of Mines of France.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending March 1st and years from January 1st:

TONS OF 2240 LBS.	1879. Week.	1879. Year.	1878. Week.	1878. Year.
Wyoming Region.				
D. & H. Canal Co..	55,058	416,921	49,250	450,135
D. L. & W. RR. Co.	55,841	490,629	36,998	331,831
Penn. Coal Co.	19,199	155,513	292	87,719
L. V. RR. Co.	14,579	122,024	.....	128,330
P. & N. Y. RR. Co..	631	4,770	.....	1,738
C. RR. of N. J	39,041	221,786	31,368	129,405
	184,349	1,411,643	117,908	1,129,158
Lehigh Region.				
L. V. RR. Co.	45,389	315,900	.....	366,493
C. RR. of N. J.	37,175	271,616	16,068	135,472
S. H. & W. B. RR..	.....	3,900	25	3,329
	82,564	591,506	16,093	445,300
Schuylkill Region.				
P. & R. RR. Co	112,075	886,439	70,230	386,654
Shamokin & Lykens Val.	13,049	63,162	7,744	56,699
	125,124	943,661	77,974	446,353
Sullivan Region.				
Sul. & Erie RR. Co.	1,026	9,662	.....	5,635
Total	393,063	2,956,412	211,975	2,026,446
Increase	181,088	929,936	.....	.....
Decrease	.....	.....	.....	.....

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Receipts and shipments of coal at Chicago Ill., for the week ending March 1st, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts	35,020	295,856
Shipments	8,881	72,073

The Exports of Coal from Baltimore for the week ending Feb. 28th were 550 tons, and since January 1st, 4821 tons, as against 10,014 tons for the corresponding period in 1878.

Belvidere Delaware Railroad Report for week ending March 1st:

	Week.	Year. 1879.	Year. 1878.
Coal for shipment at Coal Port (Trenton)	.....	.....	.....
Coal for shipment at South Amboy	8,000	43,927	102,064
Coal for distribution	8,125	51,664	26,746
Coal for Company's use	2,446	15,055	14,246

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads, amounts to 28,440 tons, as compared with the corresponding period in 1878.

Perth Amboy Business:

	Tons.
Received for the week	17,704
Shipped for the week	9,892
On hand March 1st	110,214

The Production of Bituminous Coal for the week ending March 1st was as follows:
Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	20,421	115,819
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs	8,658	60,755
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.	2,784	21,576
*East Broad Top	1,118	8,130
Clearfield Region, Pa.		
*Snow Shoe	458	463
*Tyrone and Clearfield	27,953	154,525
Allegheny Region, Pa.		
*Pennsylvania R. R	3,260	20,499
Pittsburg Region, Pa.		
*West Penn R. R.	4,743	26,823
*Southwest Penn. R. R.	701	4,343
* Penn & Westmoreland gas coal, Pa. R. R.	19,263	93,302
*Pennsylvania R. R.	8,299	53,773

*For the week ending Feb. 14th.

The Production of Coke for the week ending Feb. 14th:

Tons of 2000 lbs.	Week	Year.
West Penn R. R.	2,527	12,972
Southwest Penn. R. R.	18,915	122,963
Penn. & Westmoreland Region, Pa. R. R.	1,036	10,161
Pittsburg, Penn. R. R.	3,444	21,648
Penn. R. R. (Allegheny Region)	1,085	7,025
Total	27,007	174,769

PRICES OF COAL.

New York.

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	.....	.....	.....	.....	.....	.....
*Pittston, at Weehawken	2 30	2 30	2 30	2 30	2 65	2 35
L. Val. Coal Co., at Amboy	.....	.....	.....	.....	.....	.....
Honey Brook Lehigh	3 00	.....	2 80	2 80	2 80	2 60
Wilkes-Barre at Pt. Johnson	2 40	2 40	2 45	2 45	2 80	2 60
Plymouth Red Ash at Port Johnson	.....	.....	2 45	2 50	3 10	2 70
LEHIGH COAL.						
†Spring Mount, Lehigh, at P. Amboy	3 25	3 00	2 85	2 85	2 85	2 75
Cross Creek, at Port John.	3 00	2 75	2 75	2 75	2 75	2 70
†Buck Mount, Vein at Elizabeth Port or S. A.	3 00	3 00	2 75	2 75	2 85	2 75
Fulton	3 40	.....	3 60	3 00	2 85	2 75

* Forty cents per ton additional for delivery in New York.

† These prices are given by Whitney, McCreary & Kemmerer.

Wholesale Prices of Bituminous Coal.

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2.75@2.90	4.35@4.50	
Cumberland, at Baltimore	2.90@3.00	4.35@4.50	
Cl'rfi'd "Eureka" and "Franklin."			
At mines	0.75	....	.....
At Baltimore	3.25	....	4.50
At Philadelphia	3.25	....	4.50

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside at New York.
Westmoreland and Penn	$4.25	.....
At Greenwich, Philadelphia	.....	$5.50
At S. Amboy	5.00	5 50
Kanawha at Richmond	4.10	5.40
Red Bank Cannel, Pa., at Philadelphia	8.00	8.50
Youghiogheny, Waverly Co., at Balt	4.00	5.65
Despard, West Va.	4.50	6 00
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., " "	3 75	5.70
Newburg Orrel. Md. " "	3.75	6.00
Cannelton Cannel, West Va	.....	10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65
Peytona Cannel, W. Va., at Richmond	....	10.00

Retail Prices.

Per ton of 2000 lbs,

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$3.75	$4.00	$3.75
Lack. coal, delivered below 59th St.	3.75	4.00	3.75

Baltimore. March 4, 1879.

[Specially reported.]

Wholesale Prices per ton of 2240 lbs. In cars at Depot N. C. R. R.

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

Lump and Steamboat	$3.00	Chestnut	$3.00
Broken	3.00	Stove	3.35
Egg	3.00		

LYKENS VALLEY RED ASH.

Broken	$3.25	Chestnut	$3.25
Egg	3.25	Stove	3.60

For cargoes afloat alongside, 15c. *less* than car rates.

Buffalo. March 3, 1879.

[Specially reported by LEE & LOOMIS.]

	Lump.	Run of Mine.	Nut.	Slack.
Connellsville coke	$5.00	.....	.....	.....
Brookfield Coal	3.75	.....	.....	.....
Briar Hill	3.50	.....	.....	.....
" No. 2	3.15	.....	.....	.....
Youghiogheny	3.50	.....	.....	.....
Monterey	.....	2.60	2.25	1.85
Catfish	.....	2.60	2.25	1.85
Stoneboro	.....	2.60	2.25	1.85
Sterling Cannel	4.50	.....	.....	.....
Cameron	.....	.....	.....	.....
Buffalo Coal Co.	.....	.....	.....	.....

Terms, equal to cash in New York city funds.

BLOSSBURG COAL.

Per ton of 2000 lbs.

	To dealers.	To consumers.
By car or boat	$3.25	$3.25
In yard	3.40	3.60
In car	.....	3.65
Delivered	.....	4.00

	To dealers.		Retail.
	On cars or boats.	In yard, screened.	Delivered.
Grate	$4.15	$4.25	$5.15
Egg	4.25	4.35	5.25
Stove	4.50	4.60	5.50
Chestnut	4.00	4.10	5.00
Lehigh Lump	....	....	....
Blossburg	3.25	3.40	4.00

[Specially reported by E. L. HEDSTROM.]

Prices at International and Suspension bridges for dealers in Canada and the West, per ton of 2000 lbs.:

Grate.	Egg.	Stove.	Chestnut.
$4.15	$4.25	$4.50	$4.00

Prices at Buffalo for city dealers:

Grate.	Egg.	Stove.	Chestnut.
$4.15	$4.25	$4.50	$4.00

Buffalo retail prices, delivered:

Grate.	Egg.	Stove.	Chestnut.
$5.15	$5.25	$5.50	$5.00

[Specially reported by C. M. UNDERHILL.]

	DELIVERED AT				
	Elmira.	Ithaca.	Syracuse	Rochester.	Oswego
	Afloat.	Afloat.	Afloat.	Afloat.	F. O. B
Lump	.....	.....	.....	.....	.....
Grate	$3.75	$3.60	$3.60	$3.85	$4.05
Egg	3.85	3.70	3.70	3.95	4.15
Stove	3.95	3.95	3.95	4.20	4.40
Nut	3.85	3.85	3.60	3.85	3.90

	DELIVERED AT					
	Sodus Point.	Charlotte.	Erie.	Buffalo.		
	F.O.B.	F.O.B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump	.....	.....	.....	.....	.....	.....
Grate	$4.05	$4.05	$4.55	$4.15	$4.55	$5.15
Egg	4.15	4.15	4.65	4.25	4.65	5.25
Stove	4.40	4.40	4.90	4.50	4.90	5.50
Nut	3.90	3.90	4.40	4.00	4.40	5.00

Chicago. March 4, 1879.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.50	Cannel	$6.00
" Chestnut	6.00	Wilm'gton & Ill	3.50
" Egg	6.00	Indiana Block	4.50
" Broken	6.00	Blossburg	5.50
Erie and Brier Hill	$5.50		

Cincinnati. Feb. 3, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghiogheny	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Indianapolis. March 3, 1879.

[Specially reported by Messrs. COBB & BRANHAM.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 2000 lbs.

White River	None in market	Hocking Valley	4.20
Brazil Block	$2.35	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	3.70
Indiana Cannel	3.65	Blossburg (smithing)	4.80
Pevtona	5.70		

Per car, 12 tons.

Block coal, nut	$16.00	Block Slack	$13.00
Highland, "	15.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

Raymond City	15c.	Block Nut, steam use	6c.
Brazil Block	12	" Slack, "	5
Highland Grate	10	Virginia Cannel	24
Block Nut, domestic use	11	Indiana Cannel	16
Highland Nut, " "	10	Youghiogheny	16
" " steam	6	Blossburg	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed	14c.	Wholesale, lump	10c.
" lump	12	" crushed	12

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes	$5.50	Wilkes-Barre, all sizes	$7.00
Lackawanna, "	5.75	Lackawanna, "	7.00
Lehigh "	6.75	Lehigh, "	8.00

Louisville. March 3, 1879.

[Specially reported by Messrs. BYRNE & SPEED.]

Wholesale per bushel of 72 lbs.

Pittsburg	6c.	Kentucky, in river	5½c.
Raymond City	6	Kentucky, on cars	6

Retail.

Pittsburg	$3.00	City made Coke	8c.
Raymond City	2.75	Gas Coke	8
Kentucky	2.50	Cannel Coal	17
Anthracite, per ton	7.50	Hard and soft Coke	8

New Orleans. March 3, 1879.

[Specially reported by Messrs. C. A. MILTENBERGER & Co.

PITTSBURG COAL.

At wholesale (by boat-load)	25@27c.	per bbl. of	180 lbs.
To steamboats	40@45c.	"	"
" manufactories	@40c.	"	"
" families	45@50c.	"	"
In hhds. (for shipment)	$5.00 per hhd	from 5 to 6	bbls.

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$6.00 to $7.00
To families etc	8 50 to 9.00

ST. BERNARD (KY.) COAL.

To steamboats	40c.	per bbl. of	180 lbs.
" families	45c.	"	"
Virginia cannel at retail	85c.	"	"

FREIGHTS.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending March 6th, 1879, are given below.

DATE.	From	To	Cargo.	R'te
Feb. 7	Baltimore	St. Thomas	Coal	2.60
" 7	Baltimore	St. Jago	Coal	2.38
" 7	Barren Island	Charleston	*	1.70
" 7	New York	Wil'ngt'n, N. C.	*	§
" 7	New York	Savannah	*	§
" 7	Hoboken	Richmond	Pig-iron	85
" 8	Callao	United Ki'gd'm	Guano	4.51
" 8	Callao	Continent	Guano	‖
" 8	Callao	Guadaloupe	Guano	90f.
" 8	Philadelphia	Wil'ngt'n, N. C.	RR. iron	2.25
" 11	Nevassa	Baltimore	Guano	2.25
" 11	New York	Neuvitas	Coal	1.10
" 11	Ashley River, S. C.	Orient	†	3.00
" 11	Ashley River, S. C.	Richmond	†	2.62
" 11	Barren Island	Port Royal	*	§
" 12	Baker's Island	Liverpool	Guano	††
" 14	New York	Pichilingue	Coal	8.40
" 14	London	Savannah	*	2.00
" 18	Barren Island	Savannah	*	1.75
" 18	New York	Norfolk	**	1.00
" 18	Philadelphia	Savannah	Guano	2.00
" 21	Baltimore	Baracoa	Coal	2.00
" 21	Ashley River, S. C.	Baltimore	†	2.15
" 21	New York	Savannah	Guano	2 00
" 21	New York	Philadelphia	Salt	3.50
" 21	New York	Richmond	*	1.00
" 21	New York	Richmond	‡	1.00
" 22	Ashley River	Wilmi'gt'n, Del.	*	2.25
" 25	Barren Island	Savannah	†	2.00
" 25	Linden, N. J.	Savannah	†	§
" 28	Weymouth	Wil'ngt'n, N. C.	*	1.25
" 28	Boston	Newark, N. J.	Bones	1.25
" 28	Barren Island	Savannah	*	2.00
" 28	New York	Charleston	Guano	2.00
" 28	Charleston	Baltimore	†	2.00
Mch. 4	Boston	San Francisco	Iron	§§
" 4	Savannah	Philadelphia	Old iron	2.65
" 4	New York	Port Royal	‡‡	2.00
" 4	New York	Richmond	Pig-iron	‖‖

* Phosphates. † Phosphate rock. ‡ Old rails. § $2 and towing. ‖ 47s 6d. ** Peruvian guano. †† £2 15s. ‡‡ Phosphates and railroad iron. §§ $8@$10. ‖‖ 90c.@$1.

Railroad Coal Freights.

On and after March 1st, until further notice, the rates of transportation on through coal, consigned as noted below, and passing over the Lehigh Valley Railroad Company's road from mines through, will be as follows:

To	From Penn Haven.	From Mauch Chunk.
Kennedy	.....	1.50
Musconetcong and Bloomsbu'y	.....	1.60
*West End	.....	1.65
*Pattenburg	.....	1.75
Midvale, Landsdown, and Sunny-Side	.....	1.75
Stanton, Flax Mill, and Flemington Junction	.....	1.75
Three Bridges, *Neshanic, Flagtown, and South Somerville	.....	1.75
*Bound Brook	.....	1.75
*New Market	.....	1.75
New Brooklyn and Fords	.....	1.75
Woodbridge and Spa Spring	.....	1 75
Voorhees, Clyde, Middlebush, and East Millstone	.....	1.75
Jersey City, New Brunswick, and all intermediate points on the Main Line of the New Jersey Division of the Pennsylvania Railroad	.....	1.22
Perth Amboy—Local	.....	1.26
TIDE COAL.		
Mauch Chunk	14	.....
Phillipsburg	70	56
Perth Amboy	1.00	86
VIA MORRIS CANAL.		
Newark	.....	.....
Jersey City	.....	.....
New York	.....	.....
VIA NORTH PENN RR.		
Philadelphia	.....	1.50
VIA PERKIOMEN RR.		
Philadelphia	.....	1.50

* Ten cents per ton to be added to rate for all coal dumped into coal pockets.

A deduction of 25 cents per ton will be made on the New Jersey Division of this road (except Perth Amboy) on coal consigned to coal-yard dealers, and to manufacturers using coal for generating steam.

This company will ship coal over their wharves at Perth Amboy, and will retain, as compensation therefor, all of the pea and dust resulting from such shipments.

On coal shipped from stock there will be a charge of 5 cents per ton, in addition to the pea and dust.

Coal standing in cars more than one working day, will, in the absence of vessels to receive it, be dumped upon the wharf.

MORRIS CANAL.

On coal received by canal at Jersey City a charge additional to the freight of 20 cents per ton will be made for transferring it from boat to boat, and 30 cents per ton for placing the same on the wharves and re-shipping.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to March 7th, 1879.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	.....	.....	.....
Allyn's Point	.....	.....	.....
Annapolis	1.12	.....	.....
Baltimore	.....	.....	.....
Bangor	.....	1.85	.....
Bath, Me	.....	1.75	.....
Boston, Mass	1.85	.....	1.25@1.50
Braintree	.....	.....	.....
Bridgeport, Conn	.....	1.60	.....
Bristol, R. I	.....	.....	.....
Brooklyn	.....	.....	.....
Cambridge, Mass	.....	.....	.....
Charleston	.....	.....	.....
Charlestown	.....	.....	.....
Cambridgeport	.....	.....	.....
Danversport	.....	.....	.....
East Cambridge	2.05	.....	.....
East Boston	.....	.....	.....
Fall River	.....	1.60	90
Fortress Monroe	.....	.....	75
Galveston	.....	.....	.....
Georgetown	.....	.....	.....
Hackensack	.....	.....	.....
Hartford	.....	1.60	.....
Hoboken	.....	1.15@1.25	.....
Hunter's Point	.....	.....	.....
Jacksonville	.....	.....	1.50
Jersey City	.....	1.15@1.25	.....
Lynn	.....	.....	.....
Marblehead	.....	.....	.....
Middletown	.....	.....	.....
Newbern	.....	.....	.....
New Bedford	.....	1.60	1.00
Newburyport	.....	1.85	.....
New Haven	.....	1.60	.....
New London	.....	1.60	.....
Newport	.....	.....	.....
New Rochelle	.....	.....	.....
New York	.....	1.50	.....
Newark	.....	1.60	.....
Norfolk, Va	1.05	.....	75
Norwich	.....	1.75	.....
Norwalk, Conn	.....	1.75	.....
Pawtucket	.....	1.85	.....
Petersburg	1.25	.....	1.10
Philadelphia	.....	80	.....
Port Eades	.....	.....	.....
Port Royal	.....	.....	.....
Portland	.....	1.75	1.00†@1.25
Portsmouth, Va	.....	.....	.....
Portsmouth, N.H.	.....	1.85	.....
Providence	.....	1.60	90
Richmond, Va	1.25@1.30	.....	85
Rockland	.....	.....	1.65
Rockport, Mass	.....	.....	.....
Sag Harbor	.....	.....	.....
Salem, Mass	.....	1.60	.....
Savannah	.....	.....	.....
St. John, N. B.	.....	.....	1.00
Trenton	.....	1.25	.....
Wareham	.....	1.90	.....
Washington	1.30@1.35	.....	.....
W'lmington, Del.	.....	80	.....
Wood's Hole	.....	.....	.....

* And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra.

PRICES OF IRON.

Baltimore. March 3, 1879.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

The demand for iron continues fair, and there is a decided tendency toward higher prices for all grades of iron. We quote present prices as follows:

Balt. Char	$27.00@$29.00	M. & White	$13.00@$14.00
Va. "	28.00@ 30.00	C'lC.B.	Blooms 50.00@ 52.00
Anth. No. 1	19.00@ 20.00	" "	Billetts 52.00@ 55.00
" " 2	18.00@ 19.00	Ref'd	Blooms 45.00@ 50.00
" " 3	17.00@ 18.00		

Buffalo. March 5, 1879.

[Specially reported by Messrs. PALEN & BURNS.]

	4 mos.
No. 1 Ex. Foundry	$17.75@$19.50
" " B 1	16.75@ 17.00
No. 2 " "	15.75@ 16.00
Mill	16.00@ 16.50
Charcoal iron (all numbers)	24.50@.....
Lake Superior ores	@.....
American Scotch A 1	19.00
" " No. 2	16.50
" " No. 3	.....
Best selected Connellsville coke, per net ton	4.75

Cincinnati. March 5, 1879.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1..	$21.50@$22.00—4 mos.
"	No. 2 "	21.00@ 21.50—4 mos.
"	Soft Silver Gray.....	.....@ .....—4 mos.
"	Mill.....	19.00@ .....—4 mos.
Tennessee	No. 1 Foundry.....	20.00@ 21.00—4 mos.
"	No. 2 "	19.00@ 20.00—4 mos.
"	Mill.....	18.00@ 19.00—4 mos.

STONE COAL.

Ohio	No. 1 Foundry.....	$16.50@ 17.50—4 mos.
"	No. 2 "	16.00@ 16.50—4 mos.
"	No. 3 "	.....@ .....—4 mos.
"	No. 4 "	.....@ .....—4 mos.
"	Mill.....	16.00@ 16.50—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry.....	19.50@ 20.00—4 mos.
" "	No. 2 "	18.50@ 19.00—4 mos.
" "	Stove..	.....@ .....—4 mos.
" "	Mill.....	17.00@ 18.00—4 mos.

CAR-WHEEL

H'n'g R., C. B.	Hecla, Jefferson, Buckhorn, Chesapeake.	$30.00@ 35.00—4 mos.
Maryland,	" Cedar Point.....	32.00@ .....—4 mos
Missouri,	" Maramec.....	28.00@ ... .—4 mos

BLOOMS.

Charcoal ....$45.00@$50.00—cash.

SCRAP IRON.

Cast.....	40c. @ 45c.—cash
Wrought.....	62½c.@ $1.00—cash

Louisville. March 4, 1879.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal...	$21 00@$22.00	$19.00@$20.00
Southern Charcoal.....	19.00@ 20.00	17.00@ 17.50
H'n'g Rock, Stc'l & Coke..	19.00@ 20.00	18.00@ 18.50
Southern Stonecoal & Coke	19.00@ 19.50	18.00@ 18.50

"Amer. Scotch"... $18@$19 | Silver Gray... $16@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral.	$16.50@$19.00
No. 1 Stc'l & Coke, Cold-short & Neutral....	17.00@ 17.50
No. 2 Stc'l & Coke, Cold-short & Neutral....	16.50@ 17.00
No. 1 Missouri and Indiana, Red-short.....	20.00@ 21.00
White & Mottled, Cold-short & Neutral.....	15.00@ 15.50

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast.....	$30.00@$32.00
Alabama and Georgia, Cold Blast	28.00@ 30.00
Kentucky, Cold Blast.....	27 00@ 30.00

Milwaukee. Marc 3, 1879.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

No. 1 Lake Superior per gross ton.....	$23.00—4 mos.
" 2 " " " "	22.00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton	23.00—4 mos.
" 2 " " "	22.00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk.Band, per ton	$24.00@ ....—4 mos.
Hubbard "	23.00@ ..—4 mos.
Milton Silver Gray	$19.00@ 21.00@ ....—4 mos.

Four months, or $1 per ton off for cash.

CAR WHEEL.

Lake Superior ores per ton .....$24.00@25.00—4 mos

Pittsburg. March 4, 1879.

[Specially reported by A. H. CHILDS.]

	4 mos.		4 mos.
No. 1 F'dry..	$19.00@$20.00	M. & White...	$15.00@$16.00
No. 2 " ..	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge..	16.50@ 19.00	Cold Blast W..	35.00@ 37.00

Richmond, Va. March 3, 1879.

[Specially reported by ASA SNYDER, Esq.]

Amer. Scotch Pig Iron.....			$21.50@$22.50
Anthracite	"	" No. 1	19.00@ 20.00
"	"	" No. 2.....	18.50@ 19.00
"	"	" No. 3	17.00@ 18.00
"	"	Mottled	15.00@ 16.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			19.00@ 22.00
" "	"	" " neutral.	27.00@ 28.00
" Warm	"	" " cold short	18.00@ 20.00
" "	"	" " mill.....	17 00@ 18 00
Old Rails.....			17.00@ 18.00
Wrought scrap No. 1.....			16.00@ 17.00
Cast scrap—Machinery.....			15.00@ 16.00
Richmond Refined Bar Iron.....			2.00@ 2.10
Horse-shoes.....			4.00@ .....
Mule-shoes			5.00@ . ..
Old Dominion nails (standard size).....			2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

St. Louis. March 3, 1879.

[Specially reported by Messrs. SPOONER & COLLINS, Commission Agents for all kinds of Iron.]

COLD BLAST CHARCOAL—ALL NUMBERS.

Hanging Rock.....	$23@$25	Assorted Bar Iron	$1.95 rates.		
Tennessee.....	22@ 23	No. 1 Wr'ght Scrap,	90c. cwt.		
Kentucky.....	22@ 23	Heavy cast	"	65c.	"
Missouri.....	22@ 23	Light	"	40c.	"
Georgia.....	22@ 23	Old rails.....	$19.00@	$21.00	
Alabama	22@ 23	Old carwheels	17.00@	18.00	

	No. 1.	No. 2.	Mill.	White and Mottl'd
Missouri stone coal.....	$21.00	$20.00	$19.00	$17.00
" charcoal.....	20.00	19.00	18.00	.....
Tennessee charcoal.....	20.00	18.50	17.50	.....
Tenn. coke very soft and strong.....	20.00	19.00	17.00	16.00
Hanging Rock charcoal...	22.00	20.00	19.00	.....
" " cold short	23.00	21.00	20.00	.....
	ExNo.1	No. 1.	BNo.1.	No. 2.
Alice Hanging Rock coke.	$22.00	$21.00	$19.50	$19.00
Moxahala Black Band ores	21.00	20.00	19.50	18.00

METALS.

NEW YORK, Friday Evening, March 7, 1879.

The past week has been a very quiet one in the metal market. In some articles there is an actual lull, while in others buyers are holding off, believing that prices are unnaturally sustained and must decline.

RECEIPTS OF METALS AT NEW YORK FOR THE NINE WEEKS ENDING MARCH 6TH AND YEAR FROM JANUARY 1ST, 1879.

	Feb. 13	Feb. 20	Feb. 27	Mar. 6	Year from Jan. 1.
Copper, bbls.....	177	151	57	31	1,281
Copper, boxes.....	.....	.....	.....	.....	.....
Copper, cakes.....	.....	247	807	91	2,507
Lead, pigs.....	4,896	4,002	2,409	5,263	26,814
Spelter, pieces...	1,455	3,714	865	2,060	20,590
Quicksilver, flasks	.....	.....	.....	.....	.....

Copper.—There has been a little business at 15¾@15½c., and some at even less. A fair quotation is 15½c. The outlook for the copper market is very discouraging. Most good authorities express the belief that it will be necessary to export from 15,000,000 to 20,000,000 lbs. this year, and unless an improvement takes place in the European market, it is not likely that even 14c. can be secured for such copper as we send abroad. This is the position at present, and it would be well for the producers to look it squarely in the face.

From London, under date of February 21st, we have received the following:

"We have to note a little more business in Chili bars, amounting in all to about 300 tons, and consisting entirely of good and best brands, from £55@£56, according to mark. Yesterday evening some 50-ton lots, distant arrival Swansea, were sold at £55¼; and to-day there were sellers of g. o. b.'s at £55½, with three months fixed prompt. Ordinary brands were offered this afternoon at £54¾ cash, but buyers declined to pay this figure, though at £54½ we think that a moderate quantity of metal could have been disposed of. Values of Australian are quite nominal; both Burra and Wallaroo cake are held at £64; while, to effect sales, an important reduction from that price would have to be submitted to."

"There is not the least room to doubt that production is going through a very severe crisis, and that a rather large proportion of our present imports are raised at a positive loss. Even now the reduced values have told severely on the Australian mines; the outcome therefrom has already been much curtailed, and is likely to show a still further diminution. Should the rates now ruling continue at the same level for any lengthened period, we feel confident that a similar effect will be produced both in Spain and Chili—perhaps, also, in Newfoundland and the Cape."

Tin.—Straits in London is quoted to-day at £63, and in Singapore at $19.62½ with exchange at 3s. 8d. The quotation here is 14¾@14⅞c. The business foots up about 500 pigs. For February and March shipments 14½c. is asked. About ten tons of L. & F. have been sold at 14¼c. Refined is held at 14⅝c. Sales of 5 tons are reported.

From London, under date of February 21st, we have received the following:

"A considerable quantity of foreign changed hands to-day at 60½s. cash, and we estimate the sales to have been fully 100 tons thereat. The market closed with a very firm appearance, holders asked 61s., and it is said that a small sale was made at 60¾s."

Tin Plates.—The market is slightly easier, although at the close there is a better demand. We quote, per box, as follows: Charcoal, bright, ⅛ X, Melyn grade, $6.50@$6.62½, and Allaway grade, $6.12½@$6.25; Charcoal ternes, Allaway grade, $5.75@$6; coke, bright, B. V. grade, $5.37½@$5.50, and coke roofing, 14x20, $5@$5.12½.

Lead.—There has been but very little business. The market is about 4½c. Buyers are doing all they can to lower prices, and are withholding orders with the greatest pertinacity. Their wants, however, promise to be large, and they will probably be driven from their position. Later in the year the market must decline to an export basis; but there is a grain of comfort to the producers in the following from the London *Mining Journal* of February 22d.: "The stocks of lead in Spain have all been disposed of, and the consumers in England hold very light stocks, so a sharp rise may, therefore, occur in our market long before it is looked for."

The San Francisco *Commercial Herald* of Feb. 27th says:

"The China carried for New York 1613 bars of Richmond lead valued at $10,000."

Spelter and Zinc.—We learn of no business in spelter. Ordinary is quoted at 4½@4¾c., according to quality, and Bergen Port is quoted at 9c. Sheet zinc is quiet at 6⅛@6¼c.

Antimony.—There is but very little business doing in this. We quote Hallett's at 11⅝@11¾c., and Cookson's at 12⅛@12¼c.

THE BULLION MARKET.

NEW YORK, Friday Evening, March 7, 1879.

The silver market has improved a little in London, under a limited demand for the Continent. It is noticeable, however, that the East India Exchanges (as indicated by the last award of India Council bills) are less favorable to silver, and that the German government is still anxious to get gold for its surplus silver. Unless, therefore, the continental demand should continue, and prove to be sufficient to absorb the offerings from this side and from Germany, the market might reasonably be expected to decline. The closing quotations are: London, 49 1/16d.; New York, $1.08½@$1.08⅝; San Francisco, 16 per cent discount.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Mar. 1....	49⅛	*	Mar. 5.	49⅝	108¼
Mar. 3....	49½	*	Mar. 6.	49⅝	108⅜
Mar. 4....	49⅞	108	Mar. 7.	49 11-16	†

* 107¾@108. † 108½@108⅝.

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of March 1st:

February	19th..	Tybo Con.....	Nev...	$8,364.67
"	22d...	Con. Virginia	"	47,573.41
"	22d...	Ophir.....	"	79,230.38
"	22d...	Northern Belle.	"	9,136.10
"	23d. .	Martin White.....	"	6,960.00
"	24th..	Alexander.....	"	8,612.00
"	24th..	Grand Prize.....	"	14,500.00
"	24th..	Independence...	"	6,000.00
"	24th..	Paradise Valley.....	"	31,700.00
"	25th..	Highbridge.....	"	4,258.00
"	25th..	Manhattan.	"	12,063.61
"	26th..	Hillside.....	"	11,000.00
"	22d...	Bodie..	Cal.....	14,052.57
"	22d...	Standard.....	"	16,656.75
"	22d...	Stormont Mill.....	Utah.....	15,600.00
"	24th..	Christy.....	"	5,902.00
"	27th..	Silver Reef.....	"	24,156.33
"	27th..	McCormick & Co,..	"	55,450.00

The following is the bullion product of some of the principal gold and silver mines of the Pacific Coast for the month of January, taken from the San Francisco *Bulletin*:

GOLD MINES.

Black Bear Quartz.....	$12,500
Bodie.....	85,300
Caledonia (Dakota)..	11,500
Golden Terra (Dakota).	4,000
Idaho (Nevada County).....	39,500
Murchie.....	7,000
Plumas Eureka.....	46,000
Standard ($7,425 in silver)..... ...	102,200
Stewart.....	25,000
Total nine gold mines.....	$333,000

SILVER MINES.

Alexander.....	$25,800
Christy (Utah).....	20,300
Eagle.....	9,300
Endowment	2,200
Extra ($2885 in gold).....	14,400
Grand Prize ($3870 in gold).....	80,600
Highbridge.....	43,500
Indian Queen.....	17,400
Kentuck.....	4,300
Leopard.....	1,800
Leeds (Utah).....	12,800
Manhattan.....	72,800
Martin White.....	41,000
Ontario.....	63,300
Northern Belle.....	41,500
Paradise Valley.....	12,600
Raymond & Ely ($3153 in gold).....	39,100
Silver King (Arizona).....	36,000
Star.....	40,500
Tip Top (Arizona).....	41,400
Total twenty silver mines.....	$620,600

The gold and silver mines of the Comstock lode produced the following amounts in January:

	Gold.	Silver.	Total.
California.....	$174,900	$150,900	$325,800
Con. Virginia.....	65,500	74,200	139,700
Ophir.....	86,100	104,900	191,000
Trojan.....	8,400	8,000	16,400
Total	$334,900	$338,000	$672,900

BASE METAL MINES.

	Gold.	Silver.	Lead.
Eureka Consolidated.....	$88,300	$102,300	$64,900
Tybo Consolidated	5,300	52,500	11,100
Total.....	$103,600	$154,800	$76,000

The above list represents 35 mines, and the proportions of gold and silver produced by them during the fiscal month of January were as follows:

Gold mines.....	$325,600	
Gold with silver.....	344,000	
Gold with lead	103,600	
		$773,200
Silver mines	$611,500	
Silver with gold.....	345,400	
Silver with lead.....	154,800	
		1,111,700
Value of lead.....		76,000
Total		$1,960,900

For the corresponding month last year, 28 mines reported a total of $4,849,800, while for the month of December, 1878, 40 mines reported $2,521,900.

The Philadelphia Mint Coinage for February was as under:

Gold	$354,800.00
Silver	902,000.00
Base	8,918.00
Total	$1,265,718.00

PHILADELPHIA, March 3.—The formal transfer of the United States Mint from the charge of ex-Gov. Pollock to Col. A. Loudon Snowden took place at the Mint at 1 o'clock this afternoon, and was witnessed by all the employés of the establishment.

United States Purchases of Silver Bullion.—WASHINGTON, February 28.—Offers for the sale of over 600,000 ounces of silver were received at the Treasury Department on Wednesday, principally for delivery at San Francisco. About 200,000 ounces were accepted. The department has reason to believe that on Wednesday of next week offers will be received for delivery at New Orleans.

Operations of the Denver, (Col.) Mint.—Superintendent Silver, of the branch mint, informs the Denver *Democrat* that during the week ending March 1st he received about $50,000 worth of bullion. This is somewhat above the average. Mr. Silver anticipates that between $1,500,000 and $2,000,000 worth of the precious metals will be brought in during the coming season.

New York Assay Office Business for February.—The following is a statement of business at the United States Assay Office, at New York, for the month ending February 28, 1879:

Deposits of gold		$496,000
Deposits of silver—Miscellaneous	$75,000	
United States bullion, Colorado	54,000	
United States bullion, Lake Superior	85,000	
United States bullion, Montana	36,000	
United States bullion, New Mexico	25,000	
United States bullion, Utah	57,000	
		$332,000
Total deposits		$828,000
Gold bars stamped	$457,861	
Silver bars stamped	623.857	
		$1,081,718
Transmitted to Mint of the U. S. at Philadelphia, for coinage, gold		1,047,550

Exports of Gold and Silver from New York.

Week ending Saturday, March 1st	$623,321
Corresponding week last year	109,998
Since January 1st, this year	2,861,640
Corresponding period last year	2,141,899

Gold Interest Paid Out by the Treasury.

Week ending Saturday, March 1st	$716,668
Corresponding week last year	2,186,713
Since January 1st, this year	14,033,618
Corresponding period last year	18,044,330

Our Bullion Exports to China for the year ending June 30th, 1878, are given in the following:

Foreign gold and silver bullion to China	$622,685
" " " Hong Kong	2,388,965
Domestic gold and silver bullion to China	7,857,506
" " " Hong Kong	5,343,419
Total	$16,212,575

Coin Balance in the United States Treasury, March 1st, 1879:

	Feb. 1st, 1879.	March 1st, 1879.
Gold coin and bullion	$133,756,906	$133,265,559
Silver dollars	17,874,457	19,505,767
Silver coin and bullion	16,491,338	16,115,893
Total coin	$168,122,701	$168,887,219
Less actual outstanding coin certificates	17,483,020	16,711,140
Actual bullion balance	$150,639,681	$153,176,079
Total cash balance, subject to drafts drawn and to be drawn	$159,062,795	$172,383,400

Thus it is shown that the total cash balance in coin has increased $1,536,398; but it is to be observed that the gain in silver dollars is $1,631,310, or $94,912 greater than the total gain in coin and bullion.

FINANCIAL.

Coal Stocks.

NEW YORK, Friday Evening, March 7, 1879.

The week under review has been a very active one for the coal stocks in this market, and although the tendency was strongly downward during most of the week, yet to-day a slight recovery occurred which was well held at the close. There has been a strong bear influence in the market, but apparently with the object of getting some cheap stocks for a bull movement later on. Delaware & Hudson Canal, with sales of 8476 shares, has ranged from 38¼ to 40¾, closing at 40⅝. Delaware, Lackawanna & Western records sales of 216,710 shares, at 50@44⅝, closing at 47⅛. New Jersey Central has been dealt in to the extent of 54,421 shares, at 34¾@37⅛, closing at 37⅛. Seventy-five shares of Pennsylvania Coal Company have been sold at 135.

In Philadelphia the market for the coal shares has been rather quiet. There have been no important changes in quotations.

The Pennsylvania Railroad Co. reports total earnings of main line and branches during 1878 of $20,317,139.86; an increase of $1,333,683.61 over 1877; and net earnings and interest on investments of $11,516,904; an increase of $773,004 over 1877. Taxes, rentals, interest on bonded debt, etc., amounted to $5,192,439; an increase of $336,849 over 1877; leaving a net balance of $6,324,464, or $436,154 more than the previous year. The New Jersey Division shows a loss of $1,136,775, against $1,482,518, in 1877. Sundry payments for rentals and deficiency on branch roads amounting to $866,626, and the deficiency on the New Jersey Division, deducted from the net balance of the main line and branches, leaves a balance of $4,321,063 applicable to the payment of dividends. From this amount a dividend of 2 per cent, amounting to $1,377,404 was paid, leaving to the credit of income account as the result of the year's operations, $2,943,659. After charging off depreciation in securities and bad and doubtful debts, in all amounting to $1,311,922, there remained at the end of the year a total to the credit of income account of $4,057,815. The lines operated by the Pennsylvania Co. west of Pittsburg show a profit of $984,188.77.

The number of tons of coal handled by the main line and branches of the Pennsylvania Railroad was 5,007,811.

The following are the operations of the company's mines:

SUSQUEHANNA COAL COMPANY.

Receipts from sales of coal, etc.		$1,312,528.40
Expenses, mining, selling, and shipping coal, including taxes		1,066,962.27
Net earnings, 1878		$245,566.13
Deduct am't charged off for depreciation of land, being 10 cents per ton on coal mined above certain size	$30,290.73	
Reduction in value of coal and other property on hand	38,372 23	
		68,662.96
Net profit		$176,903.17
From which deduct:		
Interest on funded debt	$120,000.00	
Interest on purchase-money mortgages	20,277.66	
Interest and discount	8,110.13	
		148,387.79
Balance to credit of income for 1878		$28,515.38
Balance to debit of income for 1877		121,484.88
Being a comparative gain of		$150,000.26

SUMMIT BRANCH RAILROAD COMPANY.

Receipts from sale of coal and rents		$926,903.46
Receipts from freights, passenger traffic and mails		131.576.15
		$1,058,479.61
Add increased value of stocked coal		4,200.00
		$1,062,679.61
Deduct:		
Expenses, mining, selling and shipping coal, including taxes	$806,684.71	
Expenses, operating railroad (including rental paid Lykens Valley Railroad)	118,440.37	
		925,125.08
Net earnings, 1878		$137,554.53
From which deduct:		
Interest on funded debt	$70,000.00	
Int'rest and discount	20,105.27	
		90,105.27
Net profit for the year		$47,449.26
Net profit for 1877		27,267.32
Increased profit for 1878		$20,181.94

LYKENS VALLEY COAL COMPANY.

Gross earnings	$392,841.15
Expenses, mining, selling, and shipping coal, including taxes	415,414.41
	$22,573.26
Less increased value of stocked coal	187.25
Debit to profit and loss for the year	$22,386.01
Balance to debit of income for 1877	174,828.72
Being a comparative gain of	$152,442.71

The share capital and funded debt of this company are owned almost exclusively by the Summit Branch Railroad Company, and its earnings and expenses may therefore be considered as belonging to the workings of that corporation.

MINERAL RAILROAD AND MINING COMPANY.

Receipts	$853,334.99
Add increased value of stocked coal	3,712.40
	$857,047.39
Expenses, mining, selling, and shipping coal, including taxes	747,733.19
Net earnings	$109,314.20
Less amount paid for royalty on coal	47,614.96
Net profit for the year	61,699.24
Net profit for 1877	47,399.97
Increased profit for 1878	$14,299.27

One third of the share capital of this company is owned by the Pennsylvania Railroad Company, and two thirds by the Northern Central Railway Company. It has no indebtedness. A dividend of six per cent was declared for the year 1878.

The following table shows the number of tons of coal mined and sold by the above-named coal companies, and the average price received for the same at point of sale during 1878, as compared with 1877:

	Tons mined. 1878.	1877.
Susquehanna Coal Company	422,340	520,319
Summit Branch Railroad Company	260,600	264,468
Lykens Valley Coal Company	112,085	65,210
Mineral Railroad and Mining Co	285,777	309,720
Totals	1,080,812	1,159,717
Decrease	78,905 tons.	

	Tons sold. 1878.	1877.
Susquehanna Coal Company	430,543	528,220
Summit Branch Railroad Company	260,247	264,577
Lykens Valley Coal Company	112,723	65,211
Mineral Railroad and Mining Co	284,534	311,049
Totals	1,087,847	1,169,057
Decrease	81,210 tons.	

	Amount received at point of sale. 1878.	1877.
Susquehanna Coal Co	$1,266,617.96	$1,316,670.43
Summit Branch Railroad Co	919,290 66	853,134.66
Lykens Valley Coal Co	389,421.49	207,586,64
Mineral Railroad and Mining Co	831,808.59	841,185.84
Totals	$3,407,138 70	$3,258,577.57
Increase revenue	$148,561.13.	

The average price received per ton at point of sale, aggregating the results of the four coal companies as above, was in 1878, $3.13 2-10, and in 1877, $2.78 8-10.

The companies report says:

"The coal companies in which you are interested, it will be seen, show much better net results than for the preceding year, which is mainly attributable to the increased price obtained for coal under the arrangement existing in 1878 between the various anthracite companies, explained in the last annual report. It will, however, be observed on an examination of the results of your railway and canal properties, whose earnings are directly affected by the volume of coal carried, that in consequence of the large decrease in this class of tonnage, they show a reduction in revenue fully equivalent to the gain of your company from the increased price received for coal."

MISCELLANEOUS SALES:

North American Coal Co.—50 shares, par $25, at 1c. per share.

Ontonagon Mining Co.—102 shares, at 1c. per share.

Cleveland Iron Mining Co.—10 shares, at 45c. per share.

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Thursday Evening, March 6, 1879.

Owing to the tightening in the money market, and the consequent decline in the general market, these stocks have not been quite as strong and active as last week, yet there has been a very fair amount of transactions in them, the majority of them having advanced in the early part of the week, and declined toward the close.

Considering the inactivity in ingot copper, the stocks present a very favorable showing on the market, and are considered to be good investments to hold.

Calumet & Hecla sold at 174, and delined to 173, and closes firmer, at 173½@174.

Copper Falls has sold down to ⅝, being probably affected by the news of the death of the Treasurer, Mr. O. B. Cook, who, we regret to report, died suddenly of apoplexy on Monday last. The stock will probably recover from the break before long, as it is firmer at the close, at ¾@⅞.

Franklin is quiet, at about $4.

Osceola sold up to 11½, but is weaker at the close, at about 10¾@11½.

Pewabic is steady at ¾@⅞, and sales at ¾ of small lots.

Quincy sold at 11, and closes steady, at 10¾@11¾.

Ridge took a spurt during the week, and sold up to $1,

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share.

NAME OF COMPANY.	Capital Stock.	Shares. No.	Par Val.	Last Dividend. Mo.	Y.	A't.	Rate per Ann.	Mar. 1. H.	L.	Mar. 3. H.	L.	Mar. 4. H.	L.	Mar. 5. H.	L.	Mar. 6. H.	L.	Mar. 7. H.	L.	Sales.
	*		$				Per c'nt													
Consol. Coal.	10,250,000	102,500	100	Jan.	77		2½	....	....	....	....	....	....	....	....	....	....	....	....	....
Del. & H. C.	2,000,000	200,000	100	Aug	76		4	40⅜	38⅝	39½	38¼	39¾	38¾	39¾	39¼	39¾	39⅝	40¾	39¼	8,476
D., L. & W. RR.	26,000,000	524,000	50	July	76		5	50	45⅜	46½	44⅝	47¼	45⅝	47⅛	46⅛	46⅞	45	47⅛	45⅛	216,710
Lehigh C. & N.	3,350	208,971	50	Nov	76		1½	15⅝	15½	15½	15½	15½	15½	15½	15½	15½	15½	15¾	15⅛	1,166
Leh. Val. R.	27,228,855	540,858	50	Dec	78		1	4	35½	35⅛	35⅛	35	35½	35	35	34⅞	35	35¼	35⅛	934
Maryl'd Coal	4,400,000	44,000	100	Jan.	76		1½	1¼	....	....	....	....	....	....	....	....	....	....	....	....
N. J. C. R. R.	20,600,000	206,000	100	Apr	76		2½	2¼	38½	36	37⅜	35	38½	37	38¼	37⅜	38¼	36⅜	37⅞	37	54,42
Penn. Coal	5,000,000	100,000	50	May	78		3	....	135	135	....	....	135	....	....	....	....	....	....	....	7
Penn. R. R.	68,870,200	1,337,404	50	Nov	78		3	8	35¼	35	35	34¾	35	34¾	35	34¾	35	34⅞		34⅞	39, 56
Ph. & R. R. R.	34,378,175	685,563	50	Jan	76	+2½	10	12¾	12½	12⅝	12⅜	12¾	12¾	12¾	12¾	12¾	12¾	12¾		12⅝	5, 09

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497

Total Sales.....326,445.

there being but little stock on the market, and closes firm, at ⅞@1.

Duncan is strong, at 4½@4¾, and will probably go higher as soon as the weather becomes more favorable.

International is strong, having sold up to 55c., there being quite a number of shares taken off the market, and closes steady, at 50@60c.

Silver Islet has been quite active, fluctuating between 52 and 57, and closing rather weak, at 51½@52.

Sullivan is steady, at 10@10½, and little stock offering.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 6th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	30	.....
St.L.,I.M.& S.R.Co..	100	15¾	14⅝	14½	1,520
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	64	.....
*Penn. Salt Mf'g Co.	50	.....	.....	74½	60
*Westm'lan'd C. Co.	50	.....	.....	51	.....
*Buck Mt. Coal Co..	50	.....	.....	35	.....
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	103	.....	103	50
†B.&O.RR.Co.2d pf	100	.....	.....	98	36
" " " " com	90	96	94¼	94	156
†George's C'k C. Co	100	.....	.....	65	12
†S. Clara M'g Co...	100	.....	.....	25	.....
†Atlantic Coal Co.	10	.....	.....	95	100

BONDS.	Princ'l. When Due.	Int'est. When Due.	Hig'st.	Lowest	Amount.
D., L. & W., 7s, conv	1891	J. & D.	.....	.....	.....
" " " " 2d mtge.	1882	M. & S.	104½	.....	$1,000
N.J.C.,1stmtge.new	1890	F. & A.	.....	.....	.....
" " " 1st mtge.,con	1899	Q.	84	83⅞	†471,000
" " " convt.....	1902	M. & N.	84	82	*83,000
Lehigh & W. B., con	1899	Q.	65	.....	‡33,000
Am. Dock & Imp. 7s	.....	J. & J.	.....	.....	.....
St.L.I.M.& S.,1st mt	1892	F. & A.	110½	110¼	13,000
Ches. & O., 1st mtge	1899	M. & N.	.....	.....	.....
D & H C Co.,1stm.rg	1884	J. & J.	99½	.....	3,000
" " " " "	1891	J. & J.	99	.....	10,000
" " " " m.loan cp	1894	A. & O.	102	101¾	7,300
" " " " rg.	1894	A. & O.	102	101½	10,000
" " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	.....	.....	.....
" " " rg.	1898	J. & D.	112	111¾	17,000
" " " 2d m. 7s,rg.	1910	M. & S.	.....	116½	.....
" " " con.m.6s,rg	1823	J. & D.	101¾	.....	2,000
" " " 6s cp.	1923	J. & D.	101¼	.....	2,000
*Pa.RR.,1st m.6s,cp	1880	J. & J.	104¼	.....	7,000
" " g. m., 6s, cp.	1910	J. & J.	.....	.....	.....
" " " 6s, rg.	1910	A. & O.	113½	.....	1,000
" " con.m.6s,rg.	1905	Q.	104	.....	16,000
" " " 6s, cp.	1905	J. & D.	102	101½	*37,000
" " new loan, 5s	.....	.....	112¾	.....	200
*P.& R. R., 1st m.6s, R. C. 43-44.....	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
P.& R. R.,2d m. 7s cp	1893	A. & O.	.....	115	.....
" " " scrip....	1882	J. & J.	50	.....	4,500
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	104	.....	5,000
" " " " 7s, rg.	1911	J. & D.	104	103¾	15,000
" " " cvt.7s,R.C	1893	J. & J.	.....	.....	.....
" " C.& I.Co.,Deb 7s, R. C.....	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.....	'92-3	various	.....	.....	.....
*L.Nav.Co.,6s,rg.m.	1884	J. & Q.	106¼	.....	200
" " RR., rg. m.	1897	F. & Q.	106½	..	1,200
" " cvt. co. G. R.	1894	M. & S.	.....	.....	.....
" " "Gold R. C.	1897	J. & D.	95	94¼	4,000
" " con.m.7s,rg.	1911	J. & D.	.. .	.....	.....
*P.& N.Y.C.,7s,R.C.	1896 / 1906	J. & D.	.....	118	.....
*Pa Canal, 6s. cp..	1910	J. & J.	.....	68	.....
*Schuyl.Nav.,1st m. 6s. rg.....	1897	M. & Q.	.....	88	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	92	91½	4,000
†Balt.&O. RR., 6s..	1880	J. & J.	101½	.....	1,000
" " " "6s..	1885	A. & O.	107	.....	1,000

Total transactions for the week..... $748,190

* Assented. † $460,000 assented, selling at from 84¾@81⅞. ‡ $23,000 assented, selling at from 50@47.

Gas Stocks.

NEW YORK, Friday Evening, March 7, 1879.

The gas stock market is very strong at our quotations, which have changed but little from last week's, and it is doubtful (as will be seen by referring to our auction sales) if stock could be bought at prevailing quotations.

The Toledo Council and the Toledo Gas Company have a dispute about the city-test of the gas. The company refuses to furnish a photometer elsewhere than at the works, and the city objects. The city has a suit for $18,000 against the company for non-payment, caused by failure to deduct amount of revenue tax after its appeal by Congress—said tax, under contract, having been paid by the city.

The following is the price per thousand feet of gas in New Jersey: Millville, $3.15; Salem, $2.85; Camden, $2.47; Burlington, $2.75; Mount Holly, $3; Bordentown, $3.20; Trenton, $2.50; Rahway, $3.50; Bridgeton, $2.50.

Waterbury, Conn., has an opposition Gas Company, selling gas at $2 a thousand.

The Lebanon (Ohio) Coal Gas Co. has been incorporated with a capital stock of $25,000.

The Houston (Tex.) Gas-Light Co. will reduce the price of gas from $5 to $4 per thousand.

Wheeling (W. Va.) is lighted by gas-works owned by the city, and the *Intelligencer* actually grumbles about the high price.

The Syracuse Gas Co. has asked for an increased price for street lighting. The old price was on a basis of $2 per thousand.

A general bill has been presented before the Ontario (Canada) Legislature, asking for gas companies the right of adopting the electric light without vitiating any of the privileges of their present charters.

The Wheeling (W. Va.) Gas-Works earned in 1878 $65,575.19, against a total expenditure of $33,564.67. The price of gas there is $1.80 per thousand.

AUCTION SALES:

New York Gas Co.—4 shares, at 96½ per share.
Brooklyn Gas Co.—15 shares, at 140 per share.
Nassau Gas Co. (Brooklyn).—8 shares, at 75 per share.
People's Gas Co., of Brooklyn.—6 shares, at 26½ per share.
Metropolitan Gas Co., Brooklyn.—1 share, at 60 per share.
Nassau Gas-Light Co., of Brooklyn.—$200 certificate of indebtedness.
Metropolitan Gas-Light Co.—5 shares, at 120½ per share.
The Newburg (N. Y.) Gas-Light Co. has reduced the price of gas from $2.25 to $1.75 per thousand.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	Am. of last.	Date of last.	QUOTATIONS Bid.	As'd.
	$		P. ct.				
Mutual, N. Y....	5,000,000	$100	6	1½	Jan., '79	72½	76
" Bonds...	90,000	1,000	6	3½	Feb., '79	98	100
N. York "	4,000,000	.....	8	4	Nov, '78	100	105
Metrop. "	2,500,000	100	10	5	Feb., '79	115	125
" Certfs...	1,000,000	.....	7	3½	Feb., '79	95	100
Harlem "	1,850,000	50	6	3	Feb., '78	35	45
Manhat. "	4,000,000	50	.....‡	5	Feb., '79	176	180
Brooklyn, Bkln.	2,000,000	50	15	5	Jan., '79	137	142
Nassau	1,000,000	25	.....‡	3	Jan., '79	70	75
" Certfs...	700,000	1,000	7	3½	Nov. '78	90	95
People's.....	1,000,000	10	.....‡	3½	Jan., '79	25	30
" Certfs....	300,000	1,000	7	3½	Jan., '79	70	75
" Bonds...	325,000	.....	7	3½	May. '78	90	96½
Metrop. "	1,000,000	100	5	2½	Nov., '78	60	65
W'msb'g "	1,000,000	50	8	1½	Jan., '79	75	85
" Certfs...	1,000,000	.....	7	3½	Jan., '79	85	95
Citizens'.....	1,200,000	20	...‡	3	Jan., '79	70	75
" Certfs...	320,000	1,000	7	3½	Oct., '78	90	100
J. C., N. J.....	750,000	20	10	7½	Jan., '79	145	155
Municipal, N.Y.	466,000	50	.....	.....	.....	115	125
" Bonds..	750,000	.....	.....	.....	.....	95	...
.....	.....	.....	.....	.....	.....	.....	...

Gold and Silver Stocks.

NEW YORK, Friday Evening, March 7, 1879.

The week under review, although not up to the desires of the members of the Mining Exchange, nor as great as is expected later in the season, has yet been a very active one, and is indicative of considerable interest being taken in mining stocks. The dealings at the Exchanges have been mostly in stocks that have a representation here.

In the San Francisco stocks we note the following transactions: Bodie, 35 shares, at $7½@$6; California, 400, at $6¾@$6¼; Consolidated Virginia, 1160, at $6½@$6; Eureka Consolidated, 15, at $28¾@$28; Grand Prize, 25, at $5@$4.60; Independence, 460, at $1.60@$1.50; Northern Belle, 25, at $8½; Consolidated Pacific, 115, at $2.50@$1.90; Julia, 25, at $5.75@$5; Leviathan, 200, at 55@40c.; Navajo, 250, at 20c; Tip Top, 100, at $1@95c.; and Tuscarora, 8600, at 8@10c.

The dealings in stocks quoted at the New York Stock Exchange have been quite liberal. We note in Homestake 1155 shares, at $27⅜@$30½@$30. Ontario is quite firm and in much better request. The sales aggregate 590 shares, at $40⅛@$40⅝. In Mariposa common, 200 shares have been sold, at $2.60. Quicksilver Common records 100 shares, at $12. Sutro Tunnel has been quite active, the sales amounting to 4950 shares, at $3⅝@$2⅝.

In the better class of stocks at the Mining Exchange there has been a very good business. Hukill has been quite active, the sales amounting to 2400 shares, declining to $2.90 and recovering to $3.05 to-day. Moose has been quiet, dealings occurring in but three days since our last. The sales amount to 1000 shares, at $4.25@$4. Up to Tuesday night the sales of New York & Colorado amounted to 1000 shares, at $1.55@$1.80, since when there have been no transactions. Plumas has been active within the range of $3.25@$3.40, with sales of 3400 shares.

The reports from Findley continue to be of a very favorable nature. The run of the last nine days of February gave 120 ounces of amalgam. The dealings in this stock have aggregated 7500 shares, at 57@55c.

The Leadville Mining Company placed before the Security Committee of the Mining Exchange the papers establishing a title to the property. The stock was called on the 6th inst., since when there have been dealings aggregating 1825 shares, at $2.50@$2.35. Although the President of the company telegraphed that the dividend had been earned and advised its payment, yet the directors have thought it advisable to await fuller particulars as to the company's condition. There is a feeling of conservatism expressed by the directors that will prevent injury to the true interests of the company, even though it may not satisfy the unreasonable demand of the stockholders for dividends.

The fancies have had a very active week. American Flag has ranged between 21 and 24c., with sales of 5800 shares. Bertha & Edith, although not so strong as a week ago, has been the leading attraction, the sales having amounted to 182,200 shares, at 23@18c. Buckeye has shown more strength, owing to the confirmation of its purchase of the King of the Valley mine. We publish elsewhere the particulars of the purchase. The company may not have so good a thing as it thinks. Dahlonega has been liberally dealt in, the transactions amounting to 37,600 shares, at 16@21c. Gold Placer has assumed considerable strength and activity. The sales foot up 126,750 shares, at 19@27c. Lacrosse registers 14,200 shares, at 30@27c.

Wells, Fargo & Co. will pay on the 15th inst. a dividend of 50c. per share on the stock of the Ontario Silver Mining Co. The transfer books will close March 10th.

Capt. R. H. Rickard, 30 Pine street, has the subscription books of the Buell Gold Mining Co., which is organized with a capital stock of $500,000 divided into 100,000 shares of $5 each. This property has produced quite largely in the past, and promises well for the future. It is estimated that the improvements, including a 60-stamp mill and hoisting works capable of handling 200 to 250 tons of ore per day, are worth $100,000. There are offered for sale 40,000 shares of the stock at $1.25 per share, or on the basis of $125,000 for the whole property.

We call attention to announcement of the Cheyenne Gold Mining Company, which has been incorporated under the laws of the State of New York, with a capital stock of $1,000,000, divided into 200,000 shares of $5 each. It is the object of the company to operate the Cheyenne mine in the Black Hills, which is represented as having an immense contact vein of low grade gold ore, yielding from $8 to $10 per ton, about the yield of the ore from the famous Homestake mine. Owing to the small cost of mining and milling, which is estimated at $1.80 per ton, the ores of this district can be worked at a good profit. Mr. Gideon Frisbee, the superintendent of the company, is well and favorably known in the anthracite coal regions of Pennsylvania, where he conducted extensive explorations for coal with the diamond drill, and is a gentleman who enjoys a reputation for strict integrity. We congratulate him upon having secured a property which seems to possess the elements for a great success.

A party of Washington and New York gentlemen have formed themselves into a company under the laws of the State of West Virginia, with the corporate title of the New Find Mining Co., with a capital stock of $1,000,000, divided into 10,000 shares of $100, for the purpose of taking up 20,000 acres of land in Southern Arizona for farming and other purposes.

We have been steadily reporting a very active business in mining stocks direct with San Francisco. The *Stock Report* of that city, in its number of February 24th reviews the Eastern demand as follows:

"We are informed by our own brokers that the demand for stocks at the East is not only very large, but is steadily and persistently increasing. The general disposition at the East is to keep the making of the market on this coast rather than transfer it to New York or Boston. Here the mines are, here the changes in them for better or worse are quickest known, and here the value of these changes are the soonest felt and appreciated. The result of this sentiment is to direct the Eastern business mostly in the hands of our own brokers. From Boston there probably come the greatest number of buyers, but of course in extent and volume of business New York leads the list. A livelier interest is being felt in New England on the subject of mining stocks than perhaps any other section. Hundreds of small investments are being made—small and ever-hopeful outside securities being the favorites. The New Englanders got terribly infatuated with the Tuscaro a district about a year ago, and such stocks as Argenta, Navajo, Independence, and Grand Prize were sold there in large quantities. They haven't yet shown much in Bodie or Arizona, but now and then an order comes for stocks in those quarters. Eureka was quite a favorite; but since the dividends were cut down, the Eastern holder has become wary, and a good deal of stock is being ordered sold. The Boston buyers having big capital and metropolitan grit, stick mostly to the Comstock. Heavy orders for Ophir, Mexican, Union, and the water stocks are reported. A great deal of Justice is held there too, but operators have rather soured on that stock and are waiting patiently to get out.

"Z. D. Yost & Co. say that within the past two weeks they have had a succession of orders from New York operators of such magnitude and for such lines of stock as show that the New Yorkers pin their faith on a big coming market. Mexican, Union, Sierra Nevada, Curry, Savage and Norcross are all well represented in New York accounts. There has been a lively demand for Jacket too, Mr. Mackey, having, in his various journeys to the East, dropped here and there a word that went far to make that stock a favorite. New Yorkers have but little to do with outside properties. Yost & Co. had a pretty heavy Bodie account some time ago, on New York margin, and there is some Eureka held there also, but to make an outsider go there it must be paying dividends or be in a position to do so. But the Comstock they will gamble on every time. New Yorkers

GENERAL MINING STOCKS.

Dividend Paying Mines.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount per share of last.			DIVIDENDS. Total paid to date.	DIVIDENDS. Last Dividend.		Rate p. An	HIGHEST AND LOWEST PRICES PER SHARE IN CURRENCY AT WHICH SALES WERE MADE. Mar. 1. H.	Mar. 1. L.	Mar. 3. H.	Mar. 3. L.	Mar. 4. H.	Mar. 4. L.	Mar. 5. H.	Mar. 5. L.	Mar. 6. H.	Mar. 6. L.	Mar. 7. H.	Mar. 7. L.	SALES.
Alps	Nev.	800		30,000		204,000	Aug.	1878	$1 00	37,500	Apr.	1876	$0 05												
Belcher, G. S.	Nev.	1,040	10,400,000	104,000	100	1,496,200	Feb.	1879	1 00	15,397,200	Apr.	1876	1 00												
Bobtail, G.	Col.	2,500	1,136,630	227,326	5	*				56,831	Nov.	1877	25												
Bobtail Tunnel, G.	Col.		100,000	20,000	5	52,000	July	1873	0 30	48,000	June	1878	50												
Bodie, G.	Cal.		5,000,000	50,000	100	25,000	Feb.	1878	0 50	800,000	Jan.	1879	1 00												
California, G. S.	Nev.	600	54,000,000	540,000	100					30,240,000	Jan.	1879	1 00	6¾		6½	6¼	6⅝	6¼	6⅝	6¼			6	400
Calumet & Hecla, C.	Mch		2,000,000	80,000	25	1,200,000				13,850,000	Feb.	1879	5 00			173¼	173	174		173		173			64
Central, C.	Mch		500,000	20,000	25	100,000	June	1862	0 65	1,260,000	Feb.	1877	5 00												
Chollar Potosi, G. S.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept.	1878	5 00	3,080,000	Feb.	1872	1 00												
Copper Falls, C.	Mch		1,000,000	20,000	50	535,000	May.	1876		100,000	Nov.	1871	1 00	1		1									900
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3 00	40,500,000	June	1878	1 00	6¼	6¼	6¼	6	6¼	6⅜	6⅜	6⅛			6	1,100
Confidence, G. S.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878	0 50	78,000	May.	1865	8½												
Cons. Her. & Roe.	Col.	16,500	1,000,000	100,000	10	*																			
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	1,973,370	Dec..	1878	1 00	11,588,000	Jan..	1875	2 00												
Daney	Nev.	2,000		108,000		91,800	Nov.	1878	0 20	56,000	July	1863													
Eureka Cons., G. S. L.	Nev.		5,000,000	50,000	100	100,000	May.	1876	1 00	3,600,000	Feb..	1879	2 00							28¾	28				15
Eureka G. Mg., G.	Cal.	1,680	2,000,000	20,000	100					2,149,000	Apr.	1878	0 25												
Findley, G.	Geo.		200,000	200,000	1					40,000	Feb .	1879	10	57c	55c					56c	55c			55c	7,000
Franklin, C.	Mch		500,000	20,000	25	360,000	June	1876	5 00	585,000	Nov.	1871	1 00												
Gila	Ariz			100,000		70,000	Jan.	1879	0 25	50,000	Aug.	1875	0 25												
Gould &Curry, G. S.	Nev.	612	10,800,000	108,000	100	2,828,000	Nov.	1878	1 50	3,826,800	Oct.	1870	10 00												
Grand Prize	Nev.	1,500		100,000		100,000	July.	1878	1 00	400,000	Feb.	1878	1 00			5		4.00							25
Hale & Norcross, G. S.	Nev.	400	11,200,000	112,000	100	2,970,000	Dec.	1878	0 50	1,598,000	Apr.	1871	5 00												
Homestake, G.	Dak		10,000,000	100,000	100					60,000	Feb..	1879	20	28	27¾	28		30¼	29¾	30½	30	30½	30	30	1,155
Hukill, G. S.	Col.	3,288	1,000,000	100,000	10	*					Dec.	1878	0 10	3		3		2.90		3		3	2.90	2.95	2,300
Independence	Nev.	1,500		100,000		75,000	Feb..	1878	15	150,000	Nov.	1878	25	1.60		1.60						1.60	1.50	1.50	400
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	300,000	Aug.	1878	1 00	1,252,000	Mar.	1870	5 00												
K. K. Cons.	Nev.			50,000		30,000	Jan..	1879	1 00	50,000	Sept.	1873	0 25												
Leeds	Uth.	3,000		60,000						78,000	Oct..	1878	0 15												
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	200,000	Jan..	1879	50	162,500	Dec.	1876	0 50												
Manhattan	Nev.			50,000		50,000	Oct..	1878	1 00	400,000	Feb.	1877	1 00												
Merrimac, S.	Mas.	1,500	500,000	100,000	5	*	June			120,000	Mar.														
Minesota, C.	Mch.		1,000,000	20,000	50	436,000		1869	1 00	1,820,000	Mar.	1876	0 50												
Modoc	Cal.	4,000		100,000		450,000	Feb..	1879	0 50	50,000	Dec.	1876	0 50												
Moose	Col.	39,000	2,000,000	200,000	10	*				550,000	Mar.	1878	0 25	4.25				4.10	4	4.15	4.10				1,100
National, C.	Mch.		500,000	20,000	25	195,000	Oct..	1875	1 00	360,000	Oct.	1873	1 00												
N. Y. & Colorado, G.	Col.		1,000,000	50,000	20	*				20,000	Mar.	1877	0 20	1.80	1.55	1.75		1.80	1.75						1,000
Northern Belle, S.	Nev.	1,600	5,000,000	50,000	100					1,425,000	Feb.	1878	1 00					8½							25
Ontario.	Uth.	3,000	10,000,000	100,000	100					2,050,000	Mar.	1879	50					40¼	40⅛	40⅜	40¼	40⅜			590
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov.	1878	1 00	1,394,400	Mar.	1864	4 00												
Pewabic, C.	Mch.		500,000	20,000	25	185,000	June	1868	3 00	460,000	July	1873	1 00												
Phœnix, C.	Mch.		1,000,000	20,000	50	817,500	Sept.	1870	3 00	10,000	Dec.	1876	1 00												
Plumas	Cal.		1,000,000	100,000	10					130,000	Mar.	1879	10	3.40	3.25	3.40	3.30	3. 40	3.25	3.40	3.35	3.40	3.35	3.35	3.30	3,400
Quincy, C.	Mch.		200,000	20,000	10					2,230,000	Feb.	1878	5 00	11											70
Raymond & Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	730,000	Jan..	1879	1 00	3,075,000	Sept.	1873	3 00												
Ridge, C.	Mch.		500,000	20,000	25	200,000				90,000	Feb.	1875	1 00												
Rye Patch	Nev.	1,600		30,000		157,500	Dec..	1878	1 00	105,000	Dec.	1877	0 25												
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10					250,000															
Savage, G. S.	Nev.	800	11,200,000	112,000	100	4,196,500	Feb.	1879	1 00	4,460,000	June	1869	3 00												
Seaton, G. S.	Col.	1,700	500,000	50,000	10	*					May	1877	0 10												
Sierra Nevada, G. S.	Nev.	3,650	10,000,000	100,000	100	2,350,000	Oct..	1878	3 00	102,000	Jan.	1871	1 00												
Silver Islet	Mch													57	55	55	53	54	52½	52		52	51¾		
Silver King	Ariz	1,500	10,000,000	100,000	100					450,000	Nov.	1878	0 50												
Standard	Cal.			50,000		50,000	July	1878	1 00	900,000	Feb..	1879	1 00												
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	3,918,000	Jan..	1879	1 00	2,184,000	Aug.	1871	2 50												
McClinton	Cal..	1,000		60,000		45,000	Dec.	1878	0 25																

Non-Dividend Mines.

Allouez, C.	Mch.		1,000,000	20,000	50	940,000	May	1876	5 00																
Alpha, G. S.	Nev.	306	3,000,000	30,000	100	240,000	Mar.	1878	1 00																
Alta	Nev.	600		108,000		1,101,000	Feb.	1879	1 00																
Am. Flag, G.	Col.	5,300	600,000	60,000	10	*								21c		22c	21c	24c	21c			22c		23c	22c	5,800
Andes	Nev.	2,000		100,000		355,000	Oct	1878	0 25																
Baltimore Cons.	Nev.	1,050		84,000		1,015,000	Apr.	1878	0 50																
Benton	Nev.	600		108,000		91,800	Dec.	1878	0 50																
Bechtel	Cal.			60,000		81,000	Feb..	1879	0 10																
Bertha & Edith. G.	Vir.	645 acs.	500,000	500,000	10	*								22c	19c	23c	20c	24c	21c	22c	20c	21c	18c	22c	20c	182,200
Best & Belcher, G. S.	Nev.	545	10,080,000	100,800	100	538,500	Jan..	1879	1 00																
Boyle	Nev.	600		108,000		13,240	Aug.	1878	0 15																
Buckeye	Col.		2,000,000	400,000	5	*								21c	20c	22c	20c	22c.	21c	24c	22c	25c	23c	24c	23c	33,000
Bullion, G. S.	Nev.	913½	10,000,000	100,000	100	3,002,000	Dec.	1878	1 00																
Caledonia, G. S.	Nev.	2,188	10,000,000	100,000	100	1,591,000	Jan.	1879	0 50																
Cashier	Col.		500,000	250,000	2	*																			
Challenge	Nev.	700		5,000		10,000	Nov.	1878	0 20																
Cleveland, G	Col.	3,715	250,000	25,000	10	*																			
Cons. Imperial, G. S.	Nev.	468	50,000,000	500,000	100	875,000	Feb..	1879	0 20																
Con. N. Slope & E. T.C.	Col.	15,000	500,000	10,000	50																				
Con. Pacific	Cal.	1,400		60,000														2½				1.90		115
Dahlonega	Ga.		250,000	250,000	1									18c	17c	18c	17c	17c	16c	17c	16c	18c	17c	21c	17c	37,600
Dana, C.	Mch.		500,000	20,000	25	68,000	Jan..	1863	0 50																
Dawson, S.	Ont.		1,200,000	60,000	20			1878																	
Day	Nev.	1,500		100,000		70,000	Feb..	1879	0 15																
Dayton	Nev.	1,600		100,000		750,000	Apr.	1878	0 25																
De Frees	Ariz	1,500		100,000		115,000	Oct.	1878	15																
Duncan, S.	Ont.		1,200,000	60,000	20	75,000	July	1876	41⅔																
Exchequer, G. S.	Nev.	400	10,000,000	100,000	100	380,000	Jan..	1878	1 00									4½	4⅜	4½					250
Gold Placer, G.	Col.		5,000,000	200,000	25									21c	19c	23c	20c	24c	22c	28c	22c	27c	25c	27c	23c	126,750
Granville, G.	N. C.	357 acs.	1,000,000	100,000	10	*			0 50																
Humboldt, C.	Mch.		500,000	20,000	25	100,000	Sept	1878	0 15																
Hussey	Nev.	4,500		100,000		110,000	Jan..	1879	0 15																
International, S.	Ont.		1,200,000	60,000	20													50c							1,100
Julia, G. S.	Nev.	3,000	11,000,000	110,000	100	872,500	Jan.	1879	1 25							5¾								5	25
Justice, G. S.	Nev.	2,100	10,500,000	105,000	100	2,703,500	Jan..	1879	1 00																
King's Mountain, G.	N. C.		1,200,000	120,000	10	*																			
Kossuth	Nev.	2,700		108,000		421,200	Aug.	1877	0 15																
Lacrosse	Col.	3,900	1,000,000	100,000	10	*								29c	27c	29c		30c	28c	28c	27c	29c	28c	29c		14,200
Leadville	Col.																			2.50	2.35	2.50	2.40	2.50	2.35	1,825
Leviathan	Nev.	2,000		100,000		240,000	May.	1878	05							55c						40c			200
Luzerne	Col.	4,200	5,000,000	500,000	10	*	*																		
Madison, C.	Mch.		500,000	20,000	25	123,000	Sept	1876	0 10																
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1 00																
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1878	1 00					2.60		2.60									200
McCracken	Ariz	4,500		100,000		100,000	Oct .	1878	0 50																
Martin White	Nev.			100,000		650,000	Dec.	1878	1 50																
Mesnard, C.	Mch.		500,000	20,000	25	160,000	Apr.	1876	0 50																
Mexican, G. S.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	0 50																
Minnietta Belle	Cal.	1,500		100,000		75,000	Apr.	1878	0 50																
Mt. Bross Tunnel	Col.	8,000	2,000,000	200,000	10	*		1878																	
Navajo	Nev.	1,500		100,000		145,000	Feb.	1879	0 20					20c											250
New York	Nev.	1,000		100,000		80,000	Feb.	1879	0 40																
Occidental	Nev.	1,706		40,000		72,500	Feb.	1877	0 25																
Orig. Keystone	Nev.	1,500	1,000,000	100,000	10	50,000	Oct.	1878	0 50																
Overman, G. S.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Jan..	1879	3 00																
Osceola, C.	Mch.		1,000,000	40,000	25	2,567,880	Nov.	1877	3 00					11½						11					1.0
Petherick, C.	Mch.		500,000	20,000	100	165,533	Mar.	1876	0 50																
Pleasant View, G.	Col.	1,200	200,000	20,000	10	*																			
Quicksilver preferred	Cal.	8,500	4,291,300	42,913	100	*																			
" common	Cal.	acres.	5,708,700	57,087	100															12					100
Rockland, C.	Mch		500,000	20,000	25	495,000	Jan..	1874	1 00																
Seg. Belcher, G. S.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5 00																
Silver Hill, G. S.	Nev.	5,400	10,800,000	108,000	100	1,350,000	Jan..	1879	0 50																
Silver Prize	Nev.	1,500		100,000		65,000	Feb.	1879	0 25																
Star, C.	Mch.		500,000	20,000	25	260,000	Mar.	1876	0 50																
Superior, C.	Mch.		500,000	20,000	25	340,000	Mar.	1878	0 25																
Sutro Tunnel	Nev.		20,000,000	2,000,000	10				0 50							3½		3⅜		3¾		3	2⅝	3	2¾	4,950
Tiptop	Ariz			100,000		120,000	July	1878						1.20						1		95c				100
Tioga	Cal.	1,500		100,000		60,000	Dec.	1878	0 20																
Trio	Col.	1,250	15,000	150,000	1																				
Trojan	Nev.	1,500		100,000		240,000	Oct.	1878	0 25																
Tuscarora	Nev.			100,000		20,000	Nov.	1878	0 05									8c		8		10c		8c	8,600
Union Cons. G. S.	Nev.		10,000,000	100,000	100	310,000	Apr.	1878	0 25																
Utah	Nev.	1,000		24,000		780,000	Feb.	1879	3 00																
Ward	Nev	1,200		120,000		99,000	Jan.	1879	0 30																
Wells Fargo	Nev.	1,500		108,000		216,000	Sept.	1878	0 50																

G. Gold. S. Silver. L. Lead. C. Copper. * Non-Assessable. †† 15 16

Total Assessment levied to date $64,547,813

Total Dividends paid to date..... ... ,$153,596,231

Total Sales for the week.....43[illegible],617.

play heavily, take big risks, come up with the 'mud' with telegraphic promptness, and are generally a splendid class of customers. Messrs. Bacon & Co. report that there is a growing demand for mining stocks in Philadelphia, and that they have had quite a large number of orders from that rather conservative city. The average Quaker doesn't often gamble, but when he does, it is about the time when he believes stocks are going up. The Philadelphian, like the New Yorker, eschews wildcats, but hang an active Comstocker under his nose, and he goes for it like a salmon trout for a blue-bottle fly."

We think our contemporary makes a mistake when it says, "The general disposition at the East is to keep the making of the market on this (Pacific) coast rather than transfer it to New York or Boston." There is not much confidence in the San Francisco management, and it is only the great desire to deal in mining stocks and a feeling that there is a market for them that creates the present demand. Were the same class of mines listed here, and under Eastern management, there would be a much greater business. We have been slowly, but surely, building up an interest in mining in the East. There are millions of dollars here drawing four per cent and less per annum, and it requires little wisdom to perceive that this money would be invested in channels offering better returns, could the investors feel assured that these were safe. Many good mines may come to this market and receive no attention, but this is because those who bring them here are unable to satisfy the Eastern public that the statements made are correct or the management honest. We have already placed in this market a large portion of the capital stock of the Ontario, Homestake, Moose, Adlaide, Leadville, Plumas, Hukill, Penobscot, Standard, and others of less importance, and these stocks are largely held for investment, so that there is but little chance for activity or speculation in them. We have not yet houses that will loan money on mining stocks, except in special cases; and until we do, the dealings must differ materially from those in San Francisco, and the business will be of a much more healthy nature. At the present time, owing to the inability to speculate on reasonable margins, the speculation is confined mostly to the low-priced stocks of but little or no merit, and which are made to advance and decline almost entirely by manipulation, in the San Francisco style, on a small scale.

REVIEW OF THE SAN FRANCISCO MARKET.

A decidedly lower market characterizes the position of the San Francisco list. One or two exceptions, however, are noted in outside mines, but a marked depression is observed in the Comstocks, all of which are below the points noted in our last. Unquestionably, the failure of the mine-owners to come to an agreement with the Sutro Tunnel Company unfavorably affects the market, as many of the mines, especially those which have done scarcely any thing during the last few years but pump water, would almost be compelled to suspend operations altogether should they fail to make arrangements with the tunnel for drainage.

The following dispatch, dated San Francisco, March 6th, probably explains the true state of affairs, though various rumors are afloat in the matter:

"The negotiations for a compromise between the Sutro Tunnel Company and the Nevada mining companies have come to an end, for the present at least, the mining companies having broken them off and returned the papers. The companies assert that Sutro can not be brought to stand by verbal agreements long enough to get them on paper. Sutro, on the contrary, denies positively that he had varied from the agreement proposed by him, and assigns the following as the point of disagreement: He asserts that all ore-producing mines between the Utah on the north and the Overman on the south should begin to pay the royalty agreed upon whenever they send their water through the tunnel by direct connection or indirectly by pumping into mines in direct connections. The mining companies, on the other hand, refuse to pay royalty on ore extracted from any mine until the mine is directly connected with the tunnel by lateral drifts. In this agreement they would at present include the mines between the California on the north and the Chollar on the south."

The volume of transactions at San Francisco is gradually lessening, and all indications point to a diminution of interest in the Comstocks, and capital is seeking investment in outside properties. The total want of confidence in the Comstock rings is thus beginning to show itself. A new ore discovery, and the question regarding the employment of the tunnel by the Comstock companies settled, might put a different aspect on affairs, but under the present out-look the "old bonanza days" are past. Reports are current that active preparations are being made for the resumption of work on the mines of the South Comstock, and that the Dayton and Cherokee will commence operations some time next month, and that the Kossuth, Daney, and Amazon and Glasgow will probably follow suit soon after. But it is not as easy as it formerly was to collect assessments.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS						Opening.
	Feb. 28.	Mar'h 1.	Mar'h 3.	Mar'h 4.	Mar'h 5.	Mar'h 6.	Mar'h 7.
Alpha	19¼	18	18	18	17¼	18¼	.....
Alta	5⅝	5⅜	5½	5⅛	5⅛	5¼	5
Argenta	....	....	....	....	....	....	....
Bechtel	....	....	....	....	....	....	....
Belcher	6¼	6⅛	6	6⅞	6¼	6½	6½
Belle Isle	....	....	....	....	....	....	....
Benton	....	....	....	....	....	....	....
Best & Bel.	20¾	19¾	19¾	18⅜	17¾	17⅞	18
BlackHawk	....	....	....	....	....	....	....
Bodie	6⅜	7	7	6¾	6½	6	.....
Booker	....	....	....	....	....	....	....
Bullion	6⅛	4¾	5	5½	5⅛	5⅜	5
Bulwer	....	....	....	....	....	....	....
Caledonia	2½	2½	2⅝	2⅝	2¾	2¾	2¾
California	6¼	6	5⅞	5¾	6	5½	5⅝
Chollar-Pot	45½	45½	44½	40	39	40½	39
Confidence	....	....	....	....	....	....	....
Con. Imp	....	....	....	....	....	....	1.00
Con. Va	6	5¾	5⅞	6	5⅞	5⅝	5¼
Crown P'int	4¾	4½	4¾	4¾	4⅝	4¾	5
Endowm'nt	....	....	....	....	....	....	....
Eureka Con	29	29	28¼	27½	27½	28	.....
Exchequer	5¼	4⅞	5	5	4⅞	5	4¾
Goodshaw	....	....	....	....	....	....	....
Gould &Cur	12⅛	11½	10½	10⅜	9⅛	9¼	9
Grand Prize	4¾	4⅜	4½	4⅝	4⅝	4¾	.....
Hale & Nor.	16⅛	16	15½	15¾	14	14⅜	14
Hamburg	....	....	....	....	....	....	....
Homestake	....	....	....	....	....	....	....
Hussey	....	....	....	....	....	....	....
Indep'd'nce	....	....	....	....	....	....	....
Jackson	....	....	....	....	....	....	....
Julia Con	5⅜	5¼	5	4¾	4⅝	4¾	5
Justice	4½	5¼	4¼	4	4⅛	4	4
Kentuck	....	....	....	....	....	4⅝	4½
Kossuth	....	....	....	....	....	....	....
Leopard	....	....	....	....	....	....	....
Leviathan	....	....	....	....	....	....	....
Manhattan	....	....	....	....	....	....	....
McClinton	....	....	....	....	....	....	....
MeadowVal	....	....	....	....	....	....	....
Mexican	42	40¼	38	39½	37¼	38	36¼
Mono	....	....	....	....	....	....	....
Navajo	....	....	....	....	....	....	....
North. Belle	9	9	9	9¼	9⅛	9⅞	.....
Ophir	39¼	28	36	36½	35¼	36	35
Orig. K'ys'e	....	....	....	....	....	....	....
Overman	12⅛	11¾	11⅜	11	11½	11¾	11¾
P. Sheridan	....	....	....	....	....	....	....
Ray. & Ely	5	5	5⅛	5½	5⅝	6¾	.....
Richer	....	....	....	....	....	....	....
Savage	13⅞	13⅝	13	12⅝	11½	11⅛	10¾
Scorpion	....	....	....	....	....	....	....
Seg.Belcher	....	....	....	....	....	....	24
Sierra Nev.	48	45	45¼	47	45½	45¾	45
Silver Hill	....	....	....	....	....	2	2¼
Silver King	....	....	....	....	....	....	....
Summit	....	....	....	....	....	....	....
Tioga	....	....	....	....	....	....	....
Tip Top	....	....	....	....	....	....	....
Union Con.	76	74	68½	69	67	67½	67
Utah	....	....	....	....	....	14	13½
Ward	....	....	....	....	....	....	....
WashoeCon	....	....	....	....	....	....	....
Wells Fargo	....	....	....	....	....	....	....
Yel. Jacket.	18¼	17⅞	17¼	17⅞	17	17¼	17
.....	....	....	....	....	....	....	....
.....	....	....	....	....	....	....	....
.....	....	....	....	....	....	....	....

The local press speaks very encouragingly of the prospects of the Eureka District, the present output of which exceeds $40,000 per day, and predicts a future for it which will excel the record of the Comstock, even in its palmiest days.

Alpha closed yesterday at $18¼, against $19 a week ago. Work in the joint east drift on the 2400 level is stopped, owing to the flood of water.

Alta is down to $5 per share. Nothing particularly interesting from the mine.

Argenta has been quite active in San Francisco at from 60c. to $1 per share, the latter prices showing the improvement. Good progress is being made in this mine, and the face of the west drift, 300 level, shows favorably.

Bechtel has recently shown considerable life on the San Francisco market at 60@50c. per share. Recent information from this mine is to the effect that considerable repairs to the main shaft will be necessary.

Belcher is steady, showing but little variation during the business of the week. The main incline of this mine is down over 2600 feet.

Belle Isle has been selling quite actively in San Francisco at the uniform price of 30c. The ore-vein in the 150 level of this mine is stated to be quite regular, 15 inches in width, and good milling ore.

Belmont is not quoted on this market, but has recently changed hands in San Francisco, at 40@50c. per share. A recent letter from this mine states that it is looking well, the weekly output of ore amounting to 12 tons, having an assay value of over $100.

Best & Belcher is decidedly lower. The Osbiston, or joint shaft, is down nearly 500 feet, with a plentiful supply of water.

Bodie is still declining, closing last night at $6 per share, against $6⅝ a week ago. The company still continues its shipments, but the stock fails to respond. Is there a fear of an assessment for the purpose of erecting new mills, etc., that depresses this stock? We have encouraging accounts from the mine, which has apparently an unlimited ability to continue production.

Black Hawk, a Bodie mine, has been quite active on the San Francisco market at from 75c. to $1.15 per share. Regarding the recent strike reported in this mine, nothing new is elicited. An extensive system of explorations is now going on in order to determine the prospective value of the company's property.

Bullion is lower, with nothing particularly interesting from the mine.

Bulwer is not quoted on this market. The stock is advancing on the San Francisco market, late sales having been made at $20 per share. This mine is reported as looking very well at all points and yielding its usual amount of ore.

The old bonanzas still continue their decline, Consolidated Virginia opening at $5¼ and California ⅛ above this. These declines are attributed to the recent reduction of the Nevada Bank's loaning rates from $5 to $4 per share, with the additional security of a good indorsed commercial note as collateral. It is said in this connection that more money is loaned on these stocks on the above basis than on any security in the market. Active work is being prosecuted in both of the mines with no particular features to note. The C. & C. shaft is making fair progress, notwithstanding the water continues strong.

Caledonia shows a slight improvement. The vertical winze to the 1900 level of this mine is in a soft, friable formation of vein porphyry, and is being sunk with all possible dispatch.

Chollar-Potosi is decidedly lower; 90,000 gallons of water per day is being hoisted from this mine.

Crown Point opens at a slight advance. The north drift on the 2500 level of this mine is in favorable formation, admitting of excellent progress being made.

Eureka Consolidated does not seem inclined to recover from the low prices recently attained. The company is shipping its usual quantity of ore, namely, 50 tons per day. The total number of men now employed about the company's mine and mill will reach nearly 300. A recent letter from the mine reports good progress, with no particular change in the appearance of the various levels.

Exchequer is lower.

Grand Prize is steady.

Gould & Curry opens at $9, against $11½ a week ago—water the main difficulty.

Hale & Norcross is down $2 per share. Recent congratulatory letters from this mine are to the effect that the water has been lowered to 87 feet below the 2000 level.

Justice is lower, notwithstanding the recent pocket discovered in the mine, which it is estimated will yield about $50,000.

Julia is lower. It is anticipated to soon turn the water from this mine into the Sutro Tunnel.

Northern Belle has advanced against the general tendency of the market. This company continues its regular shipments of bullion.

Raymond & Ely closed yesterday at $6¾ per share, an advance from $5, as in our last. About 200 tons of ore are produced by this mine per month. This company has recently introduced several economies in its administration, in reducing wages and expenses in various ways, having changed its management, the McDonald ring having been ousted.

During the month of February mining companies on the Pacific coast disbursed dividends amounting to $223,250, as against $2,645,700 last year. The Eureka Consolidated disbursed $100,000, the Idaho $23,250, the Ontario and Standard each $50,000. Only one mine in the great State of Nevada (the Eureka Consolidated) paid a dividend this month, as far as advised. The hundreds of owners of Storey County stocks are this month without a dollar in the form of dividends. Meanwhile there is no abatement of assessments. Only two California mines of the scores that are being worked have remembered their owners this month in the form of dividends. Utah continues to pay $50,000 to stockholders per month, but not a cent from Arizona or Idaho in the way of dividends

Assessments, with dates when delinquent:

Exchequer, $1, March 31st; Succor Mill and Mining Co., 50c., March 21st; Alta, $1, March 27th; Howe, 3c., March 31st; Endowment, 25c, March 26th; Eagle, 25c., March 27th; Pinal, $6, April 5th; New York, 40c., March 25th; Belvidere, 20c.; Aurora, 20c.